ESET SMART SECURITY 5

User Guide

(intended for product version 5.2 and higher)

Microsoft® Windows® 8 / 7 / Vista / XP / 2000 / Home Server

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ESET **SMART SECURITY**

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1. ESET Smart Security

ESET Smart Security 5 represents a new approach to truly integrated computer security. The most recent version of the ThreatSense® scanning engine, combined with our custom Personal firewall and Antispam module, utilizes speed and precision to keep your computer safe. The result is an intelligent system that is constantly on alert for attacks and malicious software endangering your computer.

ESET Smart Security 5 is a complete security solution produced from our long-term effort to combine maximum protection and a minimal system footprint. The advanced technologies, based on artificial intelligence, are capable of proactively eliminating infiltration by viruses, spyware, trojan horses, worms, adware, rootkits, and other Internet-borne attacks without hindering system performance or disrupting your computer.

1.1 What's new

Parental control

Parental control lets you block sites that may contain potentially offensive material. In addition, parents can prohibit access to up to 20 pre-defined website categories. This tool will help prevent children and young adults from accessing pages with inappropriate or harmful content.

HIPS

Host-based Intrusion Prevention System (HIPS) protects your system from malware and unwanted activity attempting to negatively affect your computer. HIPS utilizes advanced behavioral analysis coupled with the detection capabilities of network filtering to monitor running processes, files and registry keys, actively blocking and preventing any such attempts.

Improved Antispam

Antispam module integrated in ESET Smart Security has undergone a thorough optimization process for even higher level of detection precision.

Join ESET Live Grid network

Built on ThreatSense.Net advanced early warning system, ESET Live Grid is designed to provide additional levels of security to your computer. It constantly monitors your system's running programs and processes against the latest intelligence collected from millions of ESET users worldwide. Additionally, your system scans are processed faster and more precisely as the ESET Live Grid database grows over time. This allows us to offer greater proactive protection and speed of scanning to all our users. We recommend that you activate this feature and we thank you for your support.

Removable media control

ESET Smart Security provides removable media (CD/DVD/USB/...) control. This module allows you to scan, block or adjust extended filters/permissions and control how the user can access and work with a given device. This may be useful if the computer administrator wishes to prevent removable media insertion with unsolicited content by users.

Gamer mode

Gamer mode is a feature for users that demand uninterrupted usage of their software, do not wish to be disturbed by pop-up windows and want to minimize CPU usage. Gamer mode can also be used as a presentation mode, when a presentation cannot be interrupted by antivirus activity. By enabling this feature, all pop-up windows are disabled and the activity of the scheduler will be completely stopped. System protection still runs in the background but does not demand any user interaction.

Check for product updates

ESET Smart Security can be configured, in addition to virus signature database updates and program modules updates, to check regularly for the latest product version. During the installation process, using an older installation package, you can decide if you want to automatically download and install the latest version of ESET Smart Security.

New design

The main window of ESET Smart Security has been completely redesigned and Advanced setup is more intuitive for easier navigation.

1.2 System requirements

For seamless operation of ESET Smart Security, the system should meet the following hardware and software requirements:

Microsoft® Windows® 2000, XP

400 MHz 32-bit (x86) / 64-bit (x64)
128MB RAM of system memory
320 MB available space
Super VGA (800 x 600)

Microsoft® Windows® 8, 7, Vista, Home Server

1 GHz 32-bit (x86) / 64-bit (x64)
512MB RAM of system memory
320 MB available space
Super VGA (800 x 600)

1.3 Prevention

When you work with your computer, and especially when you browse the Internet, please keep in my mind that no antivirus system in the world can completely eliminate the risk caused by infiltrations and attacks. To provide maximum protection and convenience, it is essential to use the antivirus system correctly and adhere to several useful rules.

Update regularly

According to statistics from ESET Live Grid, thousands of new, unique infiltrations are created each day in order to bypass existing security measures and bring profit to their authors – all at the expense of other users. The specialists at ESET's Virus Lab analyze those threats on a daily basis and prepare and release updates in order to continually improve the level of protection for users of the antivirus program. An incorrectly configured update decreases the effectiveness of the program. For more information on how to configure updates, see the Update setup chapter.

Download security patches

The authors of malicious software prefer exploiting various system vulnerabilities in order to increase the effectiveness of spreading malicious code. That's why software companies watch closely for new vulnerabilities in their applications to appear and release security updates eliminating potential threats on a regular basis. It's important to download these security updates as they are released. Examples of such applications include the windows operating system or widely-used internet browser Internet Explorer.

Backup important data

Malware writers usually do not care about users' needs, and the activity of malicious programs often leads to total malfunction of an operating system and the deliberate damage of important data. It is important to regularly backup your important and sensitive data to an external source such as a DVD or external hard drive. Precautions such as these make it far easier and faster to recover your data in the event of system failure.

Regularly scan your computer for viruses

A regular automatic scan of your computer with the proper settings can remove infiltrations that may have been missed due to old virus signature updates.

Follow basic security rules

This is the most useful and most effective rule of all – always be cautious. Today, many infiltrations require user intervention in order to be executed and distributed. If you are cautious when opening new files, you will save considerable time and effort that would otherwise be spent cleaning infiltrations from your computer. Some useful rules are:

- Do not visit suspicious websites with multiple pop-ups and flashing advertisements.
- Be careful when installing freeware programs, codec packs, etc. Only use safe programs and only visit safe Internet websites.
- Be cautious when opening email attachments, particularly those from mass-mailed messages and messages from unknown senders.
- Don't use an Administrator account for everyday work with your computer.

2. Installation

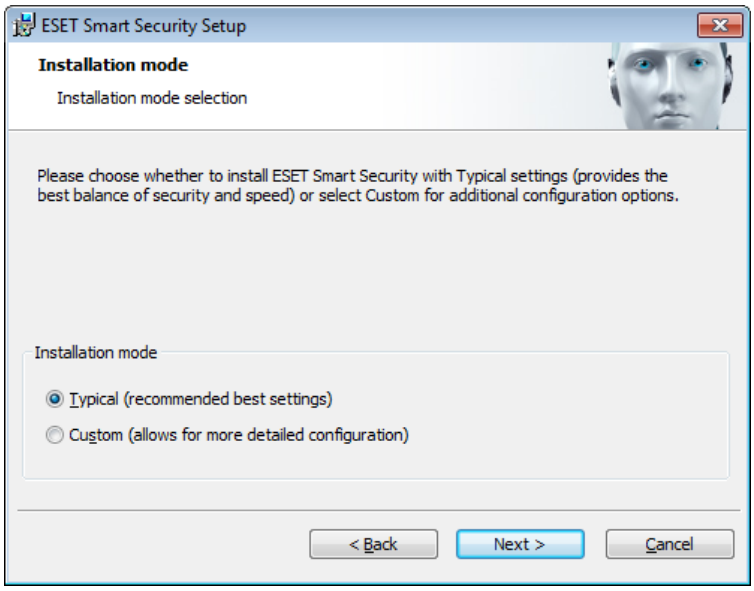
Once you launch the installer, the installation wizard will guide you through the setup process.

Important: Make sure that no other antivirus programs are installed on your computer. If two or more antivirus solutions are installed on a single computer, they may conflict with each other. We recommend that you uninstall any other antivirus programs on your system. See our knowledgebase article for a list of uninstaller tools for common antivirus software (available in English and several other languages).

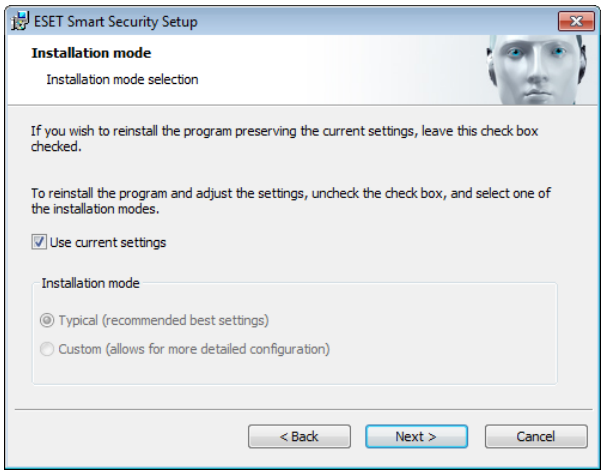
ESET Smart Security Setup
ESET
SMART
SECURITY 5
Welcome to the ESET Smart Security Setup Wizard
The Setup Wizard will allow you to repair ESET Smart Security or remove it from your computer. Click Next to continue or Cancel to exit the Setup Wizard.
< Back
Next >
Cancel

First, the program checks if a newer version of ESET Smart Security is available. If a newer version is found, you will be notified in the first step of the installation process. If you select the **Download and install new version** option, the new version will be downloaded and the installation will continue. In the next step the End-User License Agreement will be displayed. Please read and click **Accept** to acknowledge your acceptance of the End-User License Agreement. After you accept the installation will continue in two possible scenarios:

1. If you are installing ESET Smart Security on a computer for the first time, you will see the window below, after you accept the **End-User License Agreement**. Here, you can choose between a Typical installation and a Custom installation and continue accordingly.


ESET Smart Security Setup
Installation mode
Installation mode selection
Please choose whether to install ESET Smart Security with Typical settings (provides the best balance of security and speed) or select Custom for additional configuration options.
Installation mode
Typical (recommended best settings)
Custom (allows for more detailed configuration)
< Back
Next >
Cancel

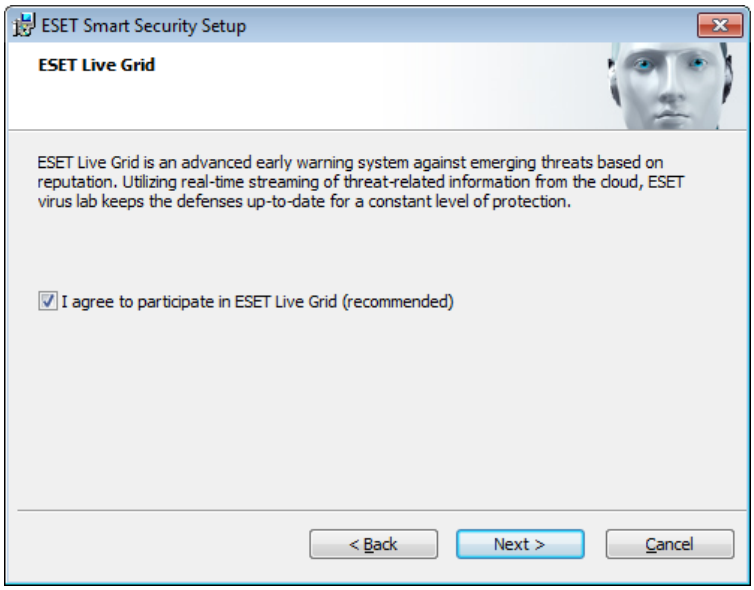
2. If you are installing ESET Smart Security over a previous version of this software, the following window lets you choose to either use your current program settings for your new installation; or, if you uncheck the **Use current settings** option, choose between the two aforementioned installation modes.


ESET Smart Security Setup
Installation mode
Installation mode selection
If you wish to reinstall the program preserving the current settings, leave this check box checked.
To reinstall the program and adjust the settings, uncheck the check box, and select one of the installation modes.
Use current settings
Installation mode
Typical (recommended best settings)
Custom (allows for more detailed configuration)
< Back
Next >
Cancel

2.1 Typical installation

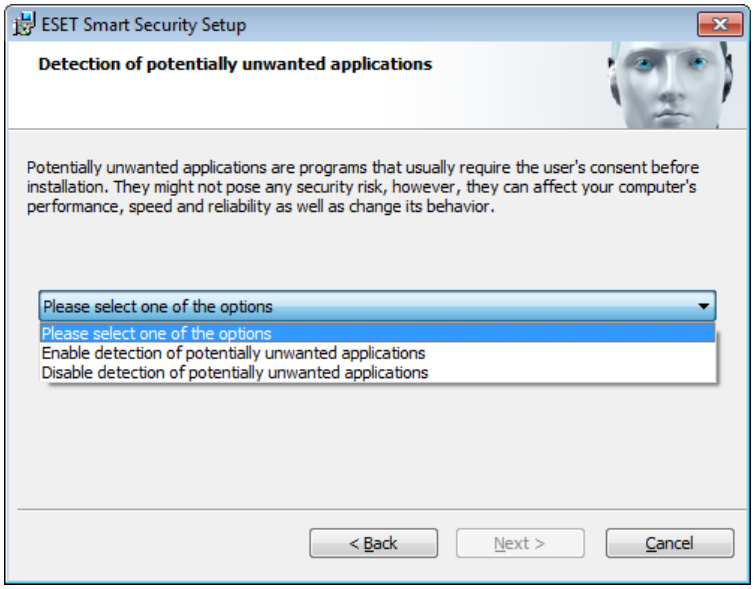
Typical installation mode provides configuration options appropriate for most users. These settings provide excellent security, easy setup and high system performance. Typical installation mode is the default option and is recommended if you do not have the particular requirements for specific settings.

After selecting the installation mode and clicking **Next**, you will be prompted to configure the ESET Live Grid. The ESET Live Grid helps to ensure that ESET is immediately and continuously informed about new infiltrations in order to protect our customers. The system allows you to submit new threats to ESET's Virus Lab, where they are analyzed, processed and added to the virus signature database.

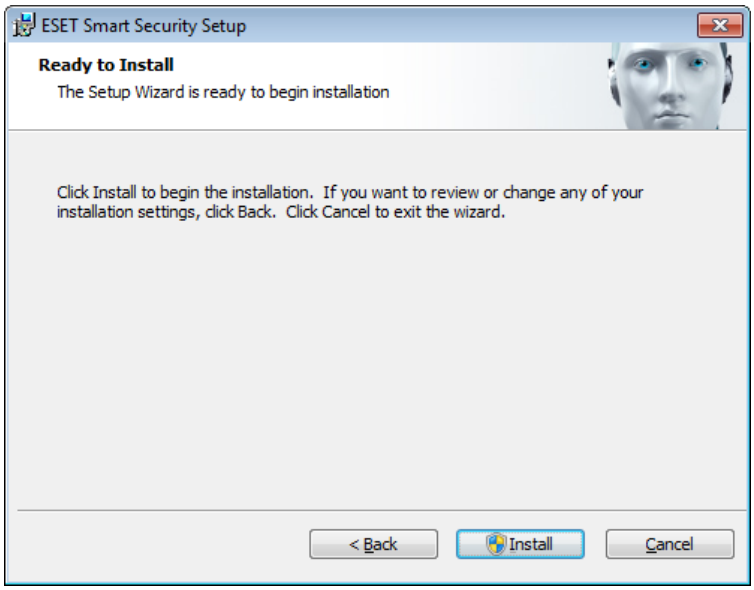

ESET Smart Security Setup
ESET Live Grid
ESET Live Grid is an advanced early warning system against emerging threats based on reputation. Utilizing real-time streaming of threat-related information from the cloud, ESET virus lab keeps the defenses up-to-date for a constant level of protection.
I agree to participate in ESET Live Grid (recommended)
< Back
Next >
Cancel

By default, the **I agree to participate in ESET Live Grid** option is selected, which will activate this feature.

The next step in the installation process is to configure detection of potentially unwanted applications. Potentially unwanted applications are not necessarily malicious, but can often negatively affect the behavior of your operating system. See the Potentially unwanted applications chapter for more details.


ESET Smart Security Setup
Detection of potentially unwanted applications
Potentially unwanted applications are programs that usually require the user's consent before installation. They might not pose any security risk, however, they can affect your computer's performance, speed and reliability as well as change its behavior.
Please select one of the options
Please select one of the options
Enable detection of potentially unwanted applications
Disable detection of potentially unwanted applications
< Back
Next >
Cancel

The final step in Typical installation mode is to confirm installation by clicking the **Install** button.


ESET Smart Security Setup
Ready to Install
The Setup Wizard is ready to begin installation
Click Install to begin the installation. If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.
< Back
Install
Cancel

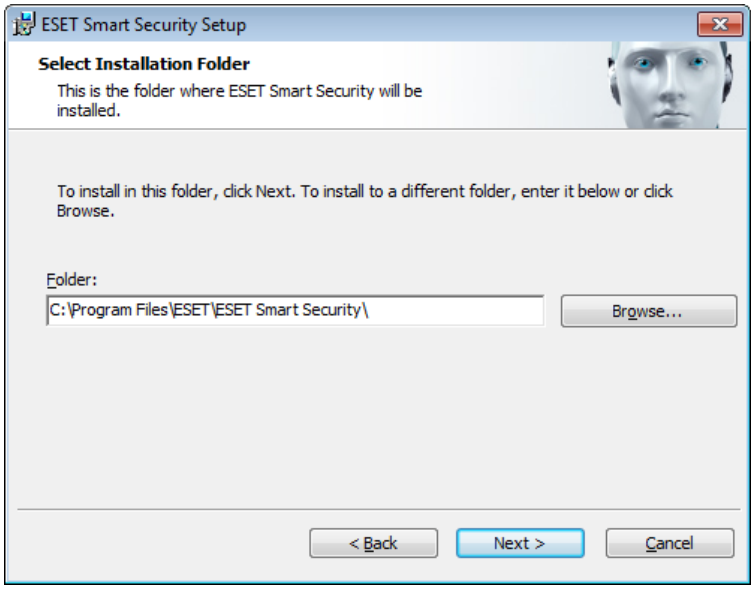
2.2 Custom installation

Custom installation mode is designed for users who have experience with fine-tuning programs and who wish to modify advanced settings during installation.

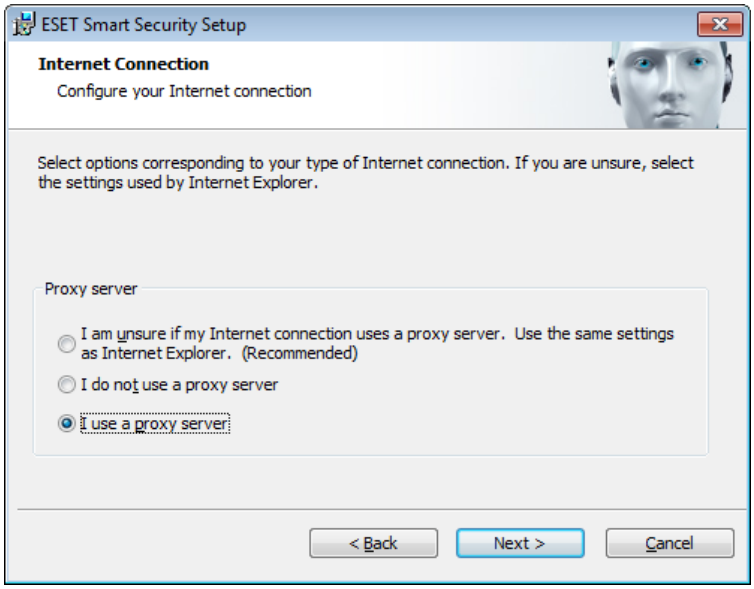
After selecting this installation mode and clicking **Next**, you will be prompted to select a destination location for the installation. By default, the program installs to the following directory:

C:\Program Files\ESET\ESET Smart Security

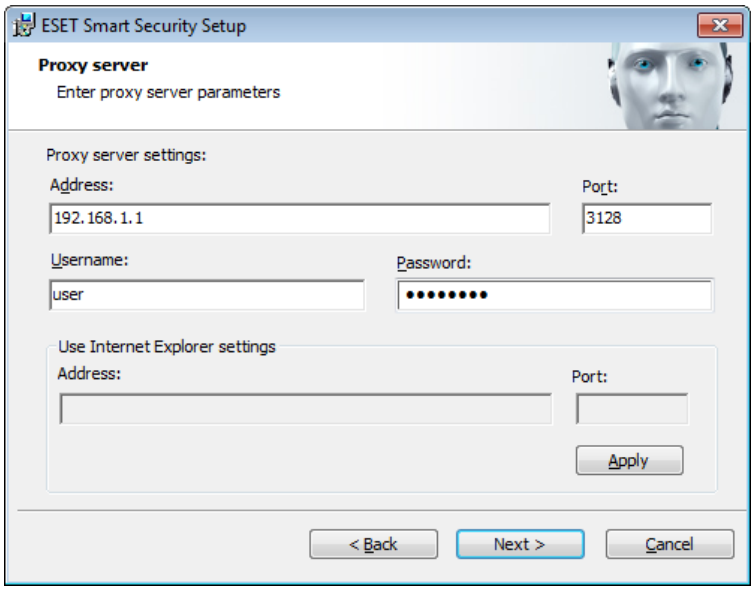
Click **Browse...** to change this location (not recommended).


ESET Smart Security Setup
Select Installation Folder
This is the folder where ESET Smart Security will be installed.
To install in this folder, click Next. To install to a different folder, enter it below or click Browse.
Folder:
C:\Program Files\ESET\ESET Smart Security\
Browse...
< Back
Next >
Cancel

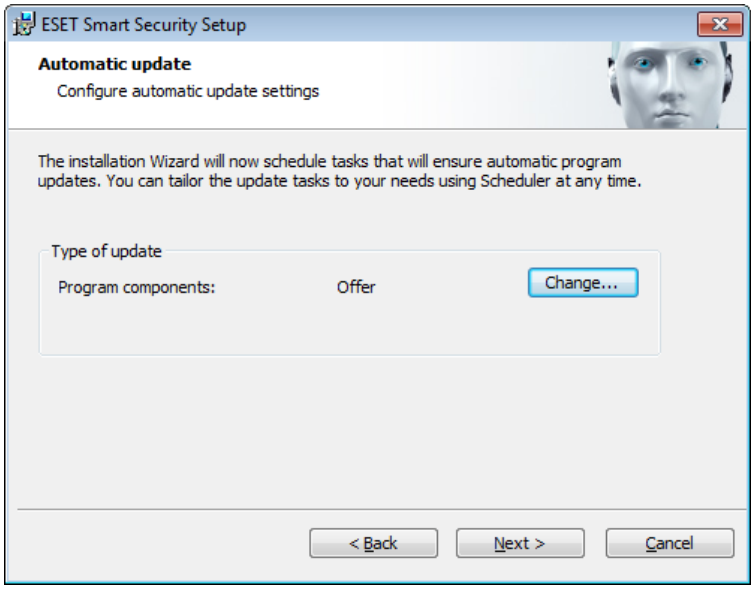
Click **Next** and proceed to configuring your Internet connection. If you use a proxy server, it must be correctly configured for virus signature updates to work. If you are not sure whether you use a proxy server to connect to the Internet, select **I am unsure if my Internet connection uses a proxy server. Use the same settings as Internet Explorer (Recommended)** and click **Next**. If you do not use a proxy server, select the **I do not use a proxy server** option.


ESET Smart Security Setup
Internet Connection
Configure your Internet connection
Select options corresponding to your type of Internet connection. If you are unsure, select the settings used by Internet Explorer.
Proxy server
I am unsure if my Internet connection uses a proxy server. Use the same settings as Internet Explorer. (Recommended)
I do not use a proxy server
I use a proxy server
< Back
Next >
Cancel

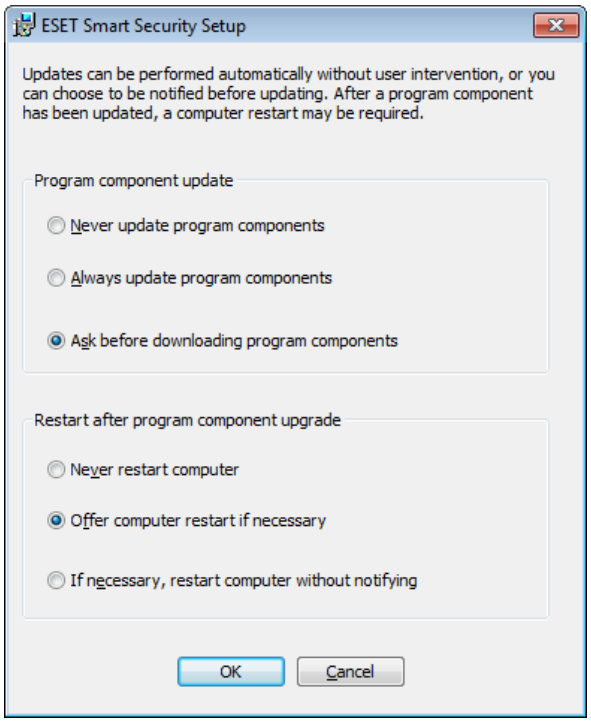
To configure your proxy server settings, select **I use a proxy server** and click **Next**. Enter the IP address or URL of your proxy server in the **Address** field. In the **Port** field, specify the port where the proxy server accepts connections (3128 by default). In the event that the proxy server requires authentication, enter a valid **Username** and **Password** to grant access to the proxy server. Proxy server settings can also be copied from Internet Explorer if desired. To do this, click **Apply** and confirm the selection.



This installation step allows you to designate how automatic program updates will be handled on your system. Click **Change...** to access the advanced settings.

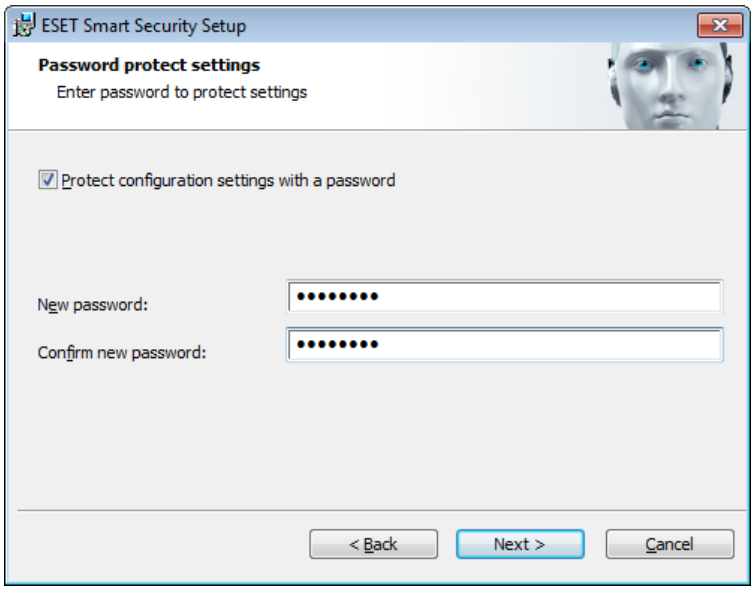

ESET Smart Security Setup
Automatic update
Configure automatic update settings
The installation Wizard will now schedule tasks that will ensure automatic program updates. You can tailor the update tasks to your needs using Scheduler at any time.
Type of update
Program components:
Offer
Change...
< Back
Next >
Cancel

If you do not want program components to be updated, select the **Never update program components** option. Select the **Ask before downloading program components** option to display a confirmation window each time the system attempts to download program components. To download program component upgrades automatically, select the **Always update program components** option.


ESET Smart Security Setup
Updates can be performed automatically without user intervention, or you can choose to be notified before updating. After a program component has been updated, a computer restart may be required.
Program component update
Never update program components
Always update program components
Ask before downloading program components
Restart after program component upgrade
Never restart computer
Offer computer restart if necessary
If necessary, restart computer without notifying
OK
Cancel

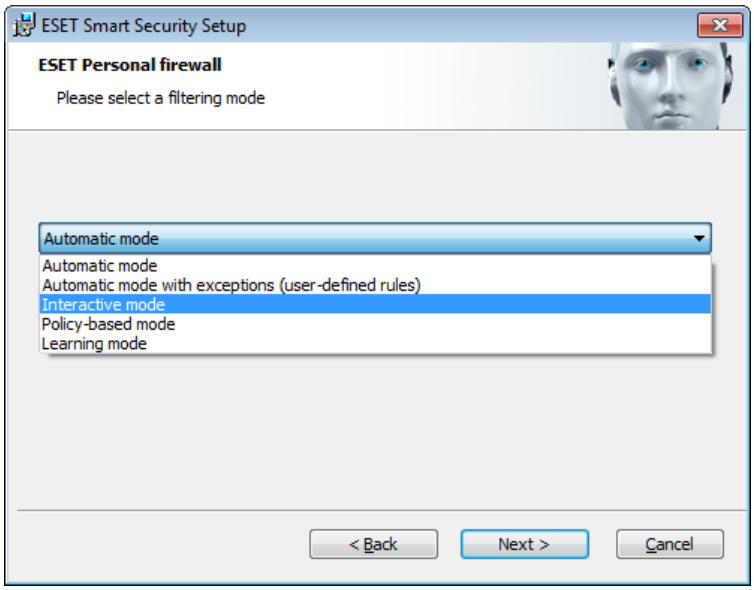
NOTE: After a program component update, a restart is usually required. We recommend selecting the **If necessary, restart computer without notifying** option.

The next installation window offers the option to set a password to protect your program settings. Select the **Protect configuration settings with a password** option and enter your password into the the **New password** and **Confirm new password** fields. This password which will be required to change or access the settings of ESET Smart Security. When both password fields match, click **Next** to continue.



The next installation steps, **ESET Live Grid** and **Detection of potentially unwanted applications** are handled the same as in the Typical installation mode (see "Typical installation").

Next, select a filtering mode for the ESET Personal firewall. Five filtering modes are available for the ESET Smart Security Personal firewall. The behavior of the firewall changes based on the selected mode. Filtering modes also influences the level of user interaction required.



Click **Install** in the **Ready to install** window to complete installation. After the installation is complete, you will be prompted to activate your product. See Typical installation for more information about product activation.

2.3 Product activation

After the installation is complete, you will be prompted to activate your product.

There are several options how to activate the product. Availability of a particular activation scenario in the activation window may vary depending on the country as well as the means of distribution of the installation file (CD/DVD, ESET web page, etc.).

If you purchased a retail boxed version of the product, select the **Activate using an Activation Key** option. The Activation Key is usually located inside or on the back side of the product package. For a successful activation, the Activation Key must be entered as supplied.

If you received a Username and Password, select the **Activate using a Username and Password** option and enter your credentials into the appropriate fields.

If you would like to evaluate ESET Smart Security before making a purchase, select the **Activate Trial License** option. Fill in your email address and country to activate ESET Smart Security for a limited time. Your test license will be emailed to you. Trial licenses can only be activated once per customer.

If you do not have a license and would like to buy one, click the **Purchase License** option. This will redirect you to the website of your local ESET distributor.

Select the **Activate Later** option if you would like to quickly evaluate our product and do not wish to activate it immediately, or if you'd like to activate your product at a later time.

You can also activate your copy of ESET Smart Security directly from the program. Click the Program menu icon located in the top right corner or right-click on the ESET Smart Security icon in the system tray and select **Product activation...** from the menu.

2.4 Entering username and password

For optimal functionality, it is important that the program is automatically updated. This is only possible if the correct username and password are entered in the **Update setup**.

If you did not enter your username and password during installation, you can do so now. In the main program window, click **Update**, then **Product activation...** and enter the license data you received with your ESET security product into the Product activation window.

When entering your **Username** and **Password**, it is important to type them exactly as they are written:

- The username and password are case sensitive and the hyphen in the username is necessary.
- The password is ten characters long and all lowercase.
- We do not use the letter L in passwords (use the number one (1) instead).
- A big 'O' is the number zero (0), a little 'o' is the lowercase letter o.

We recommend copying and pasting the data from the registration email to ensure accuracy.

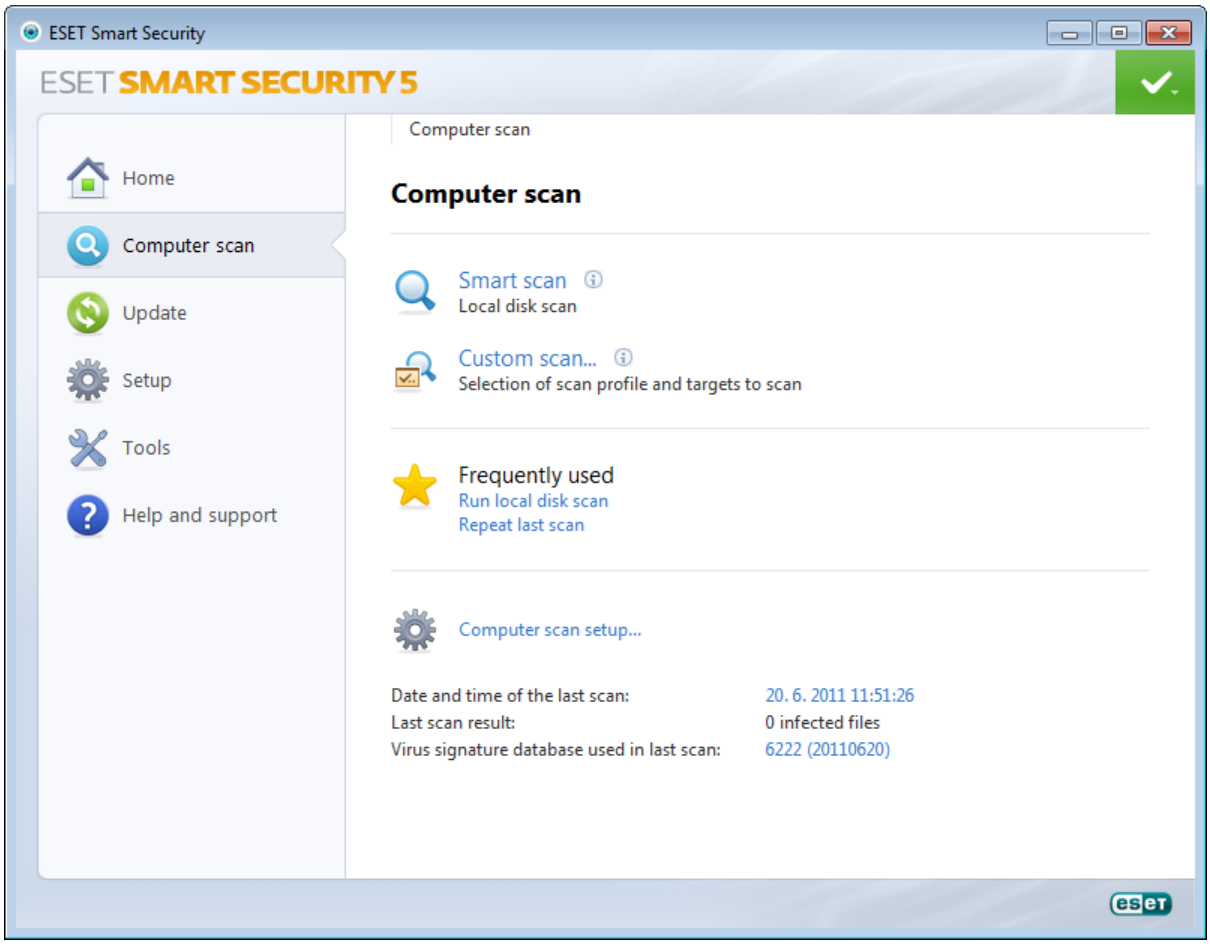
2.5 Upgrading to a more recent version

More recent of ESET Smart Security are issued to bring improvements or fix issues that cannot be resolved by automatically updating of the program modules. Upgrading to a more recent version can be accomplished in several ways:

1. Automatically, by means of a program update.
   Since the program upgrade is distributed to all users and may have impact on certain system configurations, it is issued after a long testing period to function with all possible system configurations. If you need to upgrade to a newer version immediately after its release, use one of the methods below.
2. Manually, by downloading and installing a more recent version over the previous one.
   At the beginning of installation, you can choose to preserve current program settings by selecting the **Use current settings** checkbox.
3. Manually, in the main program window by clicking **Install/Check** in **Update** > **Available version of ESET Smart Security**.

2.6 Computer scan

After installing ESET Smart Security, you should perform a computer scan to check for malicious code. In the main program window, click **Computer scan** and then click **Smart scan**. For more information about computer scans, see section Computer scan.



3. Beginner's guide

This chapter provides an initial overview of ESET Smart Security and its basic settings.

3.1 Introducing user interface design

The main program window of ESET Smart Security is divided into two main sections. The primary window on the right displays information that corresponds to the option selected from the main menu on the left.

The following is a description of options within the main menu:

Home – Provides information about the protection status of ESET Smart Security.

Computer scan – This option allows you to configure and launch a Smart scan or Custom scan.

Update – Displays information about virus signature database updates.

Setup – Select this option to adjust your security level for Computer, Web and Email, Network and Parental control .

Tools – Provides access to Log files, Protection statistics, Watch activity, Running processes, Network connections, Scheduler, Quarantine, ESET SysInspector and ESET SysRescue.

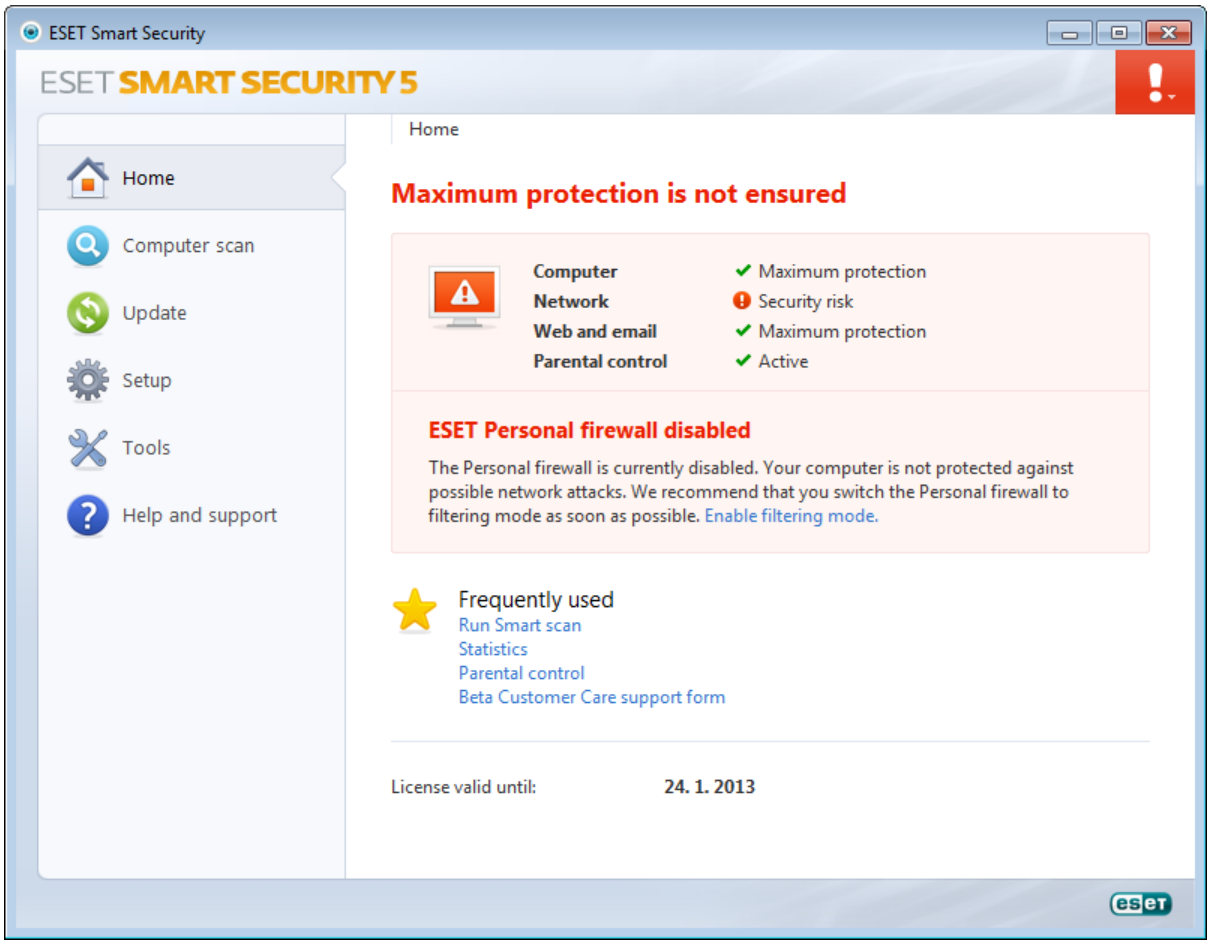
Help and support – Provides access to help files, the ESET Knowledgebase, ESET's website and links to open a Customer Care support request.

The **Home** screen informs you about the security and current protection level of your computer. The green **Maximum protection** status indicates that maximum protection is ensured.

The status window also displays frequently used features in ESET Smart Security. Information about the program's expiration date can also be found here.

3.2 What to do if the program doesn't work properly

If the modules enabled are working properly, they are assigned a green check. If not, a red exclamation point or orange notification icon is displayed. Additional information about the module is shown in the upper part of the window. A suggested solution for fixing the module is also displayed. To change the status of individual modules, click **Setup** in the main menu and click on the desired module.



The red icon signals critical problems – maximum protection of your computer is not ensured. Possible reasons are:

- Real-time file system protection disabled
- Personal firewall disabled
- Outdated virus signature database
- Product not activated
- Product license is expired

The orange icon indicates that Web access or Email client protection is disabled, there is a problem updating the program (outdated virus signature database, cannot update) or the license is nearing its expiration date.

Product not activated – This problem is signaled by a red icon and security notification next to the **Computer** item. You can activate ESET Smart Security from the program menu using the **Product activation...** option. The program menu is located in the upper right-hand corner of the main program window.

Antivirus and antispyware protection disabled – This problem is signaled by a red icon and a security notification next to the **Computer** item. You can re-enable antivirus and antispyware protection by clicking on **Start all antivirus and antispyware protection modules**.

Web access and antiphishing protection disabled – This problem is signaled by a orange icon with an "i" and the **Security notification** status. You can re-enable Web access and antiphishing protection by clicking on the security notification and then click on **Enable Web access and antiphishing protection**.

ESET Personal firewall disabled – This problem is signaled by a red icon and a security notification next to the **Network** item. You can re-enable network protection by clicking on **Enable filtering mode**.

Your license will expire soon – This is indicated by the protection status icon is displaying an exclamation point. After the license expires, the program will not be able to update and the Protection status icon will turn red.

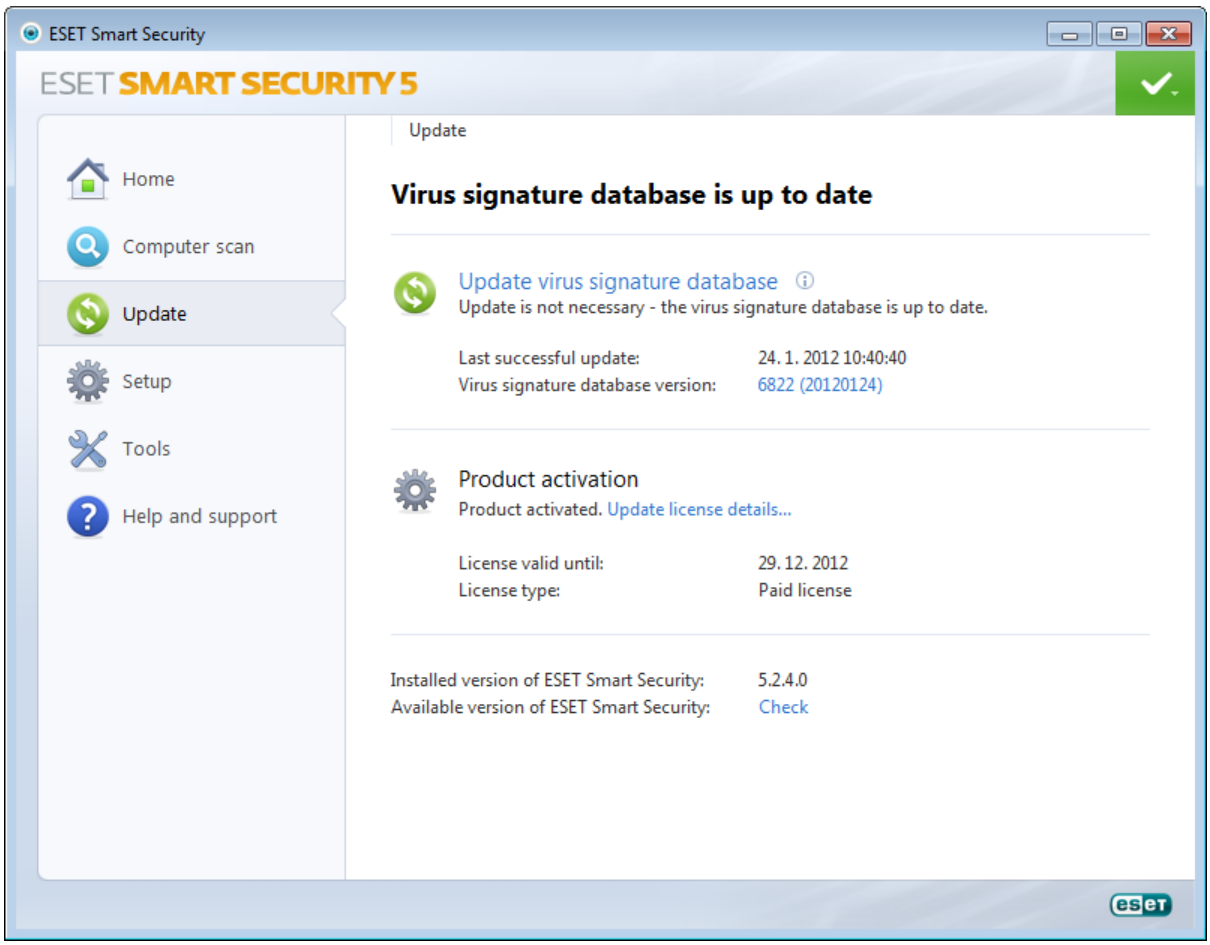
License expired – This is indicated by the Protection status icon turning red. The program is not able to update after the license expires. We recommend following the instructions in the alert window to renew your license.

If you are unable to solve a problem using the suggested solutions, click **Help and support** to access the help files or search the ESET Knowledgebase. If you still need assistance, you can submit an ESET Customer Care support request. ESET Customer Care will respond quickly to your questions and help find a resolution.

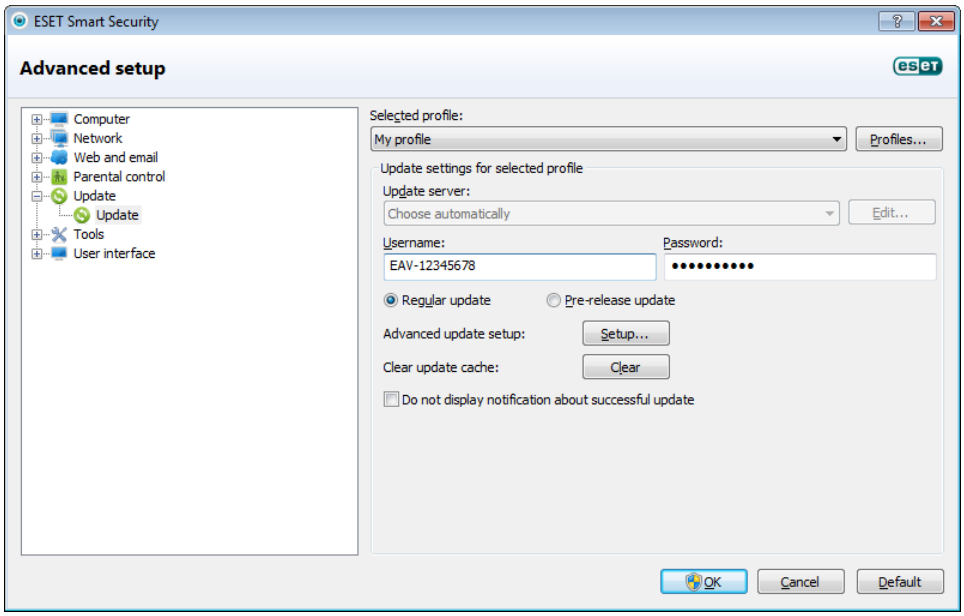
3.3 Update setup

Updating the virus signature database and updating program components are an important part of providing complete protection against malicious code. Please pay careful attention to their configuration and operation. From the main menu, select **Update** and then click **Update virus signature database** to check for a newer database update.

If the username and password were not entered during activation process of ESET Smart Security you will be prompted for them at this point.



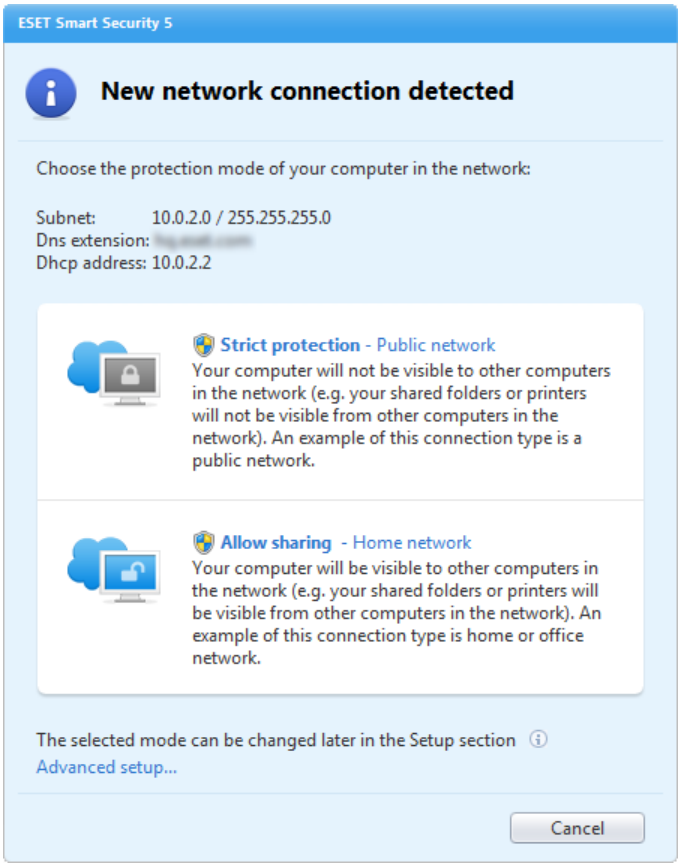
The Advanced setup window (click **Setup** in the main menu and then click **Enter advanced setup...**, or press F5 on your keyboard) contains additional update options. Click **Update** in the Advanced setup tree on the left. The **Update server** drop-down menu is greyed out and set to **Choose automatically**. To configure advanced update options such as update mode, proxy server access and LAN connections, click the **Setup...** button.



3.4 Trusted zone setup

It is necessary to configure the Trusted zone to protect your computer in a network environment. You can allow other users to access your computer by configuring the Trusted zone to allow sharing. Click **Setup** > **Network** > **Change the protection mode of your computer in the network...**. A window will display options allowing you to choose the desired protection mode of your computer in the network.

Trusted zone detection occurs after ESET Smart Security installation and whenever your computer connects to a new network.Therefore, there is usually no need to define the Trusted zone. By default, a dialog window is displayed upon detection of a new zone which allows you to set the protection level for that zone.


ESET Smart Security 5
New network connection detected
Choose the protection mode of your computer in the network:
Subnet: 10.0.2.0 / 255.255.255.0
Dns extension:
Dhcp address: 10.0.2.2
Strict protection - Public network
Your computer will not be visible to other computers in the network (e.g. your shared folders or printers will not be visible from other computers in the network). An example of this connection type is a public network.
Allow sharing - Home network
Your computer will be visible to other computers in the network (e.g. your shared folders or printers will be visible from other computers in the network). An example of this connection type is home or office network.
The selected mode can be changed later in the Setup section
Advanced setup...
Cancel

Warning: An incorrect trusted zone configuration may pose a security risk to your computer.

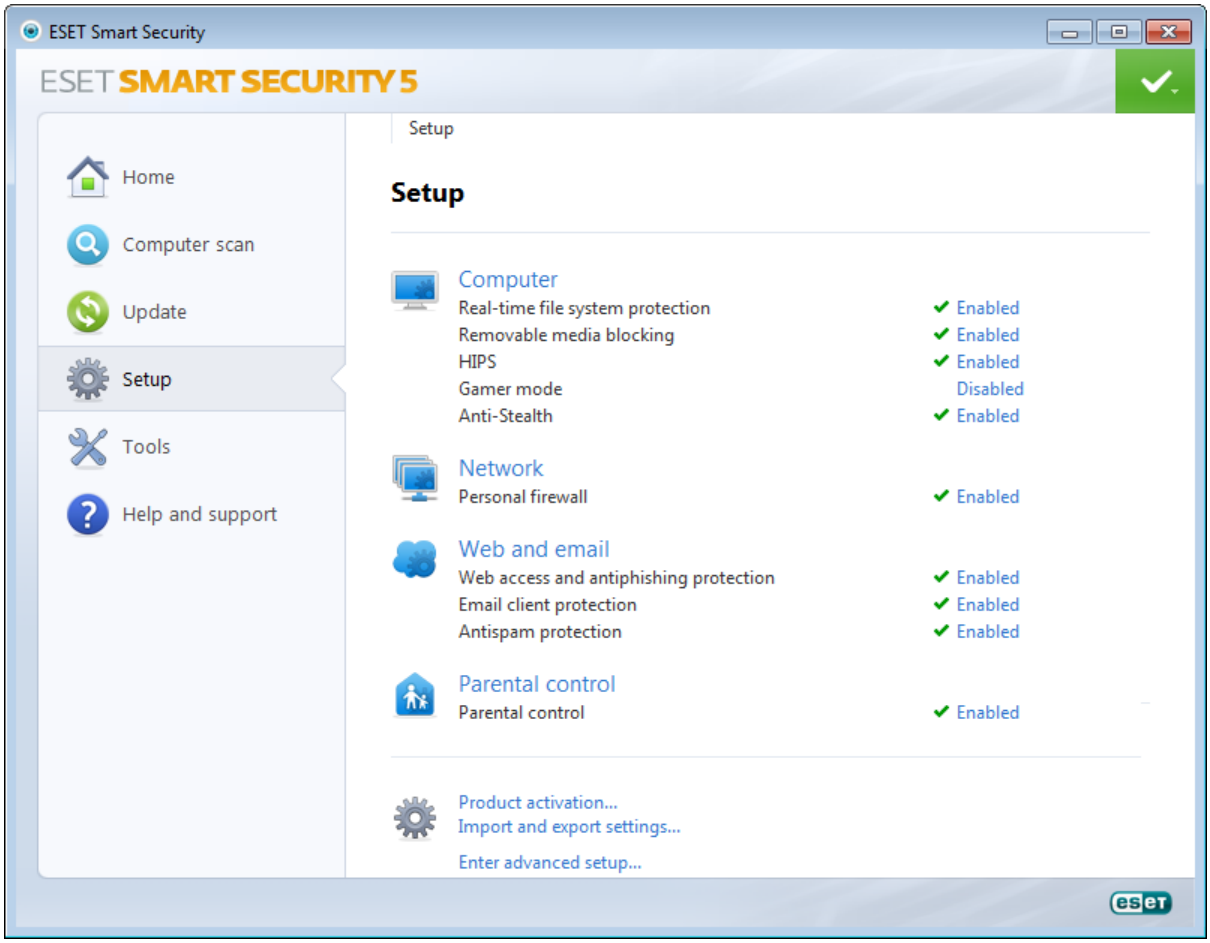
NOTE: By default, workstations from a Trusted zone are granted access to shared files and printers, have incoming RPC communication enabled and have remote desktop sharing available.

3.5 Parental control tools

If you have already enabled Parental control in ESET Smart Security, you must also configure Parental control for desired user accounts in order for Parental control to function properly. Please refer to the Parental control chapter for instructions on how to create specific restrictions for your children to protect them from potentially offensive material.

4. Work with ESET Smart Security

The ESET Smart Security setup options allow you to adjust the protection levels of your computer and network.



The **Setup** menu contains following:

- **Computer**
- **Network**
- **Web and Email**
- **Parental control**

Click any component to adjust the advanced settings of the corresponding protection module.

Computer protection setup allows you to enable or disable the following components:

- **Real-time file system protection** – All files are scanned for malicious code when they are opened, created or run on your computer.
- **Document protection** – The document protection feature scans Microsoft Office documents before they are opened, as well as files downloaded automatically by Internet Explorer, such as Microsoft ActiveX elements.
- **Removable media blocking** – This module allows you to scan, block or adjust extended filters/permissions and select how the user can access and work with a given device (CD/DVD/USB...).
- **HIPS** – The HIPS system monitors the events within the operating system and reacts to them according to a customized set of rules.
- **Gamer mode** – Enables or disables the Gamer mode. You will receive a warning message (potential security risk) and the main window will turn orange after enabling Gamer mode.
- **Anti-Stealth** – Provides detection of dangerous programs, such as rootkits, which are able to hide themselves from the operating system. This means it is not possible to detect them using ordinary testing techniques.

The **Network** section allows you to enable or disable the **Personal firewall**.

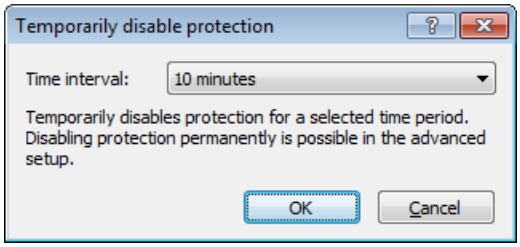
The **Web and Email** protection setup allows you to enable or disable the following components:

- **Web access and antiphishing protection** – If enabled, all traffic through HTTP or HTTPS is scanned for malicious software.
- **Email client protection** – Monitors communication received through the POP3 and IMAP protocol.
- **Antispam protection** – Scans unsolicited email, i.e., spam.

Parental control lets you block webpages that may contain potentially offensive material. In addition, parents can prohibit access to up to 20 pre-defined website categories.

NOTE: Document protection will display after enabling the option (**Enter advanced setup...** (F5) > **Computer** > **Antivirus and antispyware** > **Document protection** > **Integrate into system**). The same applies for Parental control using the appropriate path in Advanced setup.

After clicking **Enabled**, the **Temporary disable protection** dialog box will display. Click **OK** to disable the selected security component. The **Time interval** drop-down menu represents the period of time that the selected component will be disabled.



To re-enable the protection of the disabled security component, click **Disabled**.

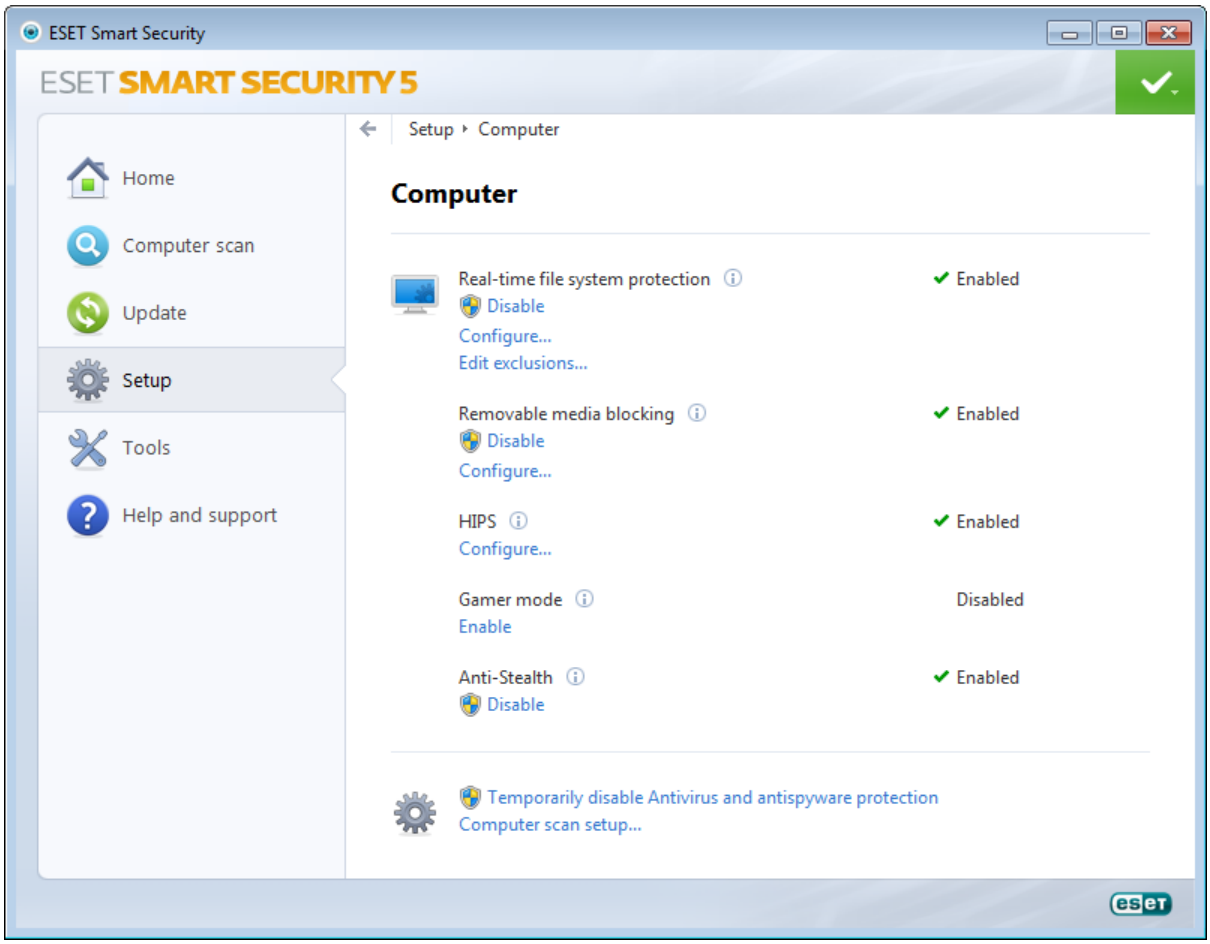
NOTE: When disabling protection using this method, all disabled parts of protection will be enabled after a computer restart.

There are additional options at the bottom of the setup window. Use the **Product activation...** link to open a registration form that will activate your ESET security product and send you an email with your authentication data (username and password). To load setup parameters using an *.xml* configuration file, or to save the current setup parameters to a configuration file, use the **Import and export settings...** option.

4.1 Computer

The **Computer** module can be found in the **Setup** pane after clicking on the **Computer** title. It shows an overview of all protection modules. To turn off individual modules temporarily, click **Disable** below the desired module. Note that this may decrease the protection of your computer. To access detailed settings for each module, click **Configure...**.

Click **Edit exclusions...** to open the Exclusion setup window, which allows you to exclude files and folders from scanning.



Temporarily disable Antivirus and antispyware protection – Disables all antivirus and antispyware protection modules. **Temporary disable protection** dialog box with **Time interval** drop-down menu will display. A **Time interval** drop-down menu represents the period of time that the protection will be disabled. Click **OK** to confirm.

Computer scan setup... – Click to adjust the parameters of the on-demand scanner (manually executed scan).

4.1.1 Antivirus and antispyware protection

Antivirus and antispyware protection guards against malicious system attacks by controlling file, email and Internet communication. If a threat with malicious code is detected, the Antivirus module can eliminate it by first blocking it, and then cleaning, deleting or moving it to quarantine.

4.1.1.1 Real-time file system protection

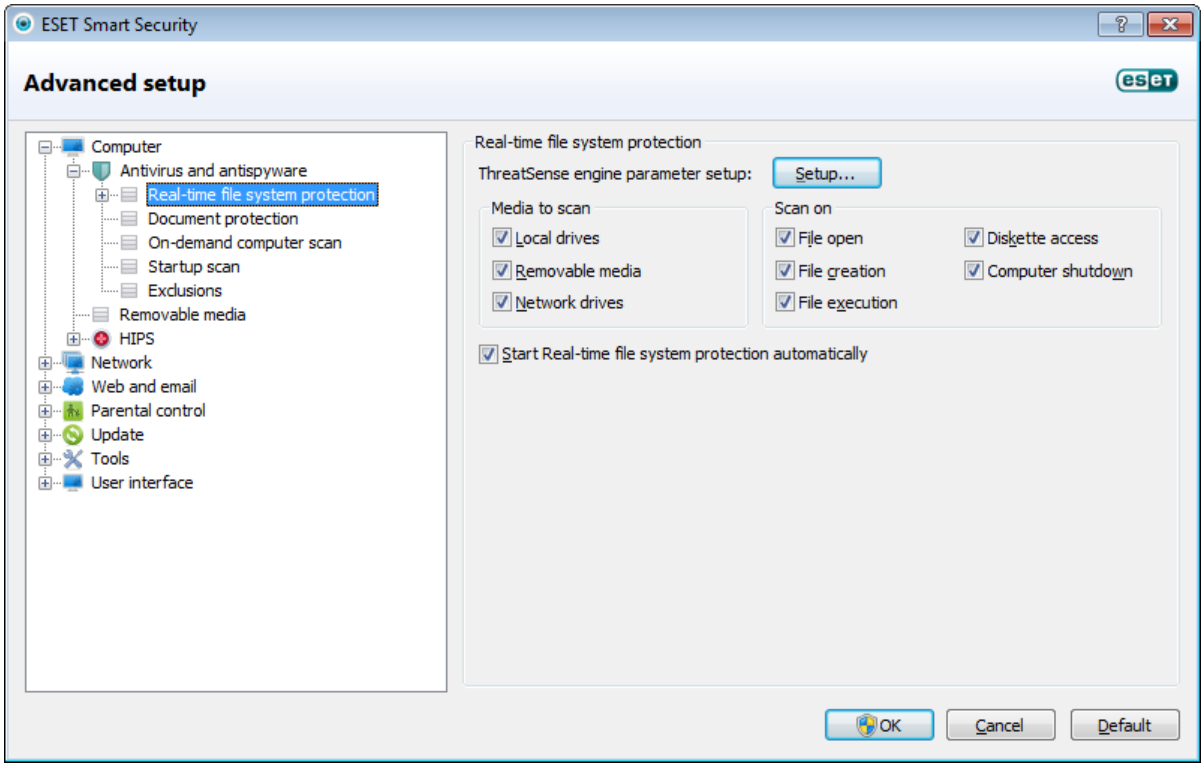
Real-time file system protection controls all antivirus-related events in the system. All files are scanned for malicious code at the moment they are opened, created or run on your computer. Real-time file system protection is launched at system startup.

The Real-time file system protection checks all types of media and is triggered by various system events such as accessing a file. Using ThreatSense technology detection methods (as described in the ThreatSense engine parameter setup section), Real-time file system protection may vary for newly created files and existing files. For newly created files, it is possible to apply a deeper level of control.

To provide a minimal system footprint when using real-time protection, files which have already been scanned are not scanned repeatedly (unless they have been modified). Files are scanned again immediately after each virus signature

database update. This behavior is configured using **Smart optimization**. If this is disabled, all files are scanned each time they are accessed. To modify this option, press F5 to open the Advanced setup window and click **Computer** > **Antivirus and antispyware** > **Real-time file system protection** in the Advanced setup tree. Then click the **Setup...** button next to **ThreatSense engine parameter setup**, click **Other** and select or deselect the **Enable Smart optimization** option.

By default, Real-time file system protection launches at system startup and provides uninterrupted scanning. In special cases (e.g., if there is a conflict with another real-time scanner), the real-time protection can be terminated by deselecting the **Start Real-time file system protection automatically** option.



4.1.1.1.1 Media to scan

By default, all types of media are scanned for potential threats.

Local drives – Controls all system hard drives.

Removable media – Diskettes, CD/DVDs, USB storage devices, etc.

Network drives – Scans all mapped drives.

We recommend that you keep the default settings and only modify them in specific cases, such as when scanning certain media significantly slows data transfers.

4.1.1.1.2 Scan on (Event-triggered scanning)

By default, all files are scanned upon opening, creation or execution. We recommend that you keep the default settings, as these provide the maximum level of real-time protection for your computer.

File open – Enables or disables scanning of opened files.

File creation – Enables or disables scanning of newly created or modified files.

File execution – Enables or disables scanning of executed files.

Diskette access – Enables or disables scanning triggered by accessing the floppy drive.

Computer shutdown – Enables or disables control of the hard disk boot sectors during computer shutdown. Although boot viruses are rare today, we recommend that you leave this option selected, as there is still the possibility of infection by a boot virus from alternate sources.

4.1.1.1.3 Advanced scan options

More detailed setup options can be found under **Computer** > **Antivirus and antispyware** > **Real-time system protection** > **Advanced setup**.

Additional ThreatSense parameters for newly created and modified files – The probability of infection in newly-created or modified files is comparatively higher than in existing files. For this reason, the program checks these files with additional scanning parameters. Along with common signature-based scanning methods, advanced heuristics are used, which greatly improves detection rates because heuristics can detect new threats before the virus signature database update is released. In addition to newly-created files, scanning is also performed on self-extracting files (.sfx) and runtime packers (internally compressed executable files). By default, archives are scanned up to the 10th nesting level and are checked regardless of their actual size. To modify archive scan settings, deselect the **Default archive scan settings** option.

Additional ThreatSense parameters for executed files – By default, advanced heuristics are not used when files are executed. However, in some cases you may want to enable this option (by checking the **Advanced heuristics on file execution** option). Note that advanced heuristics may slow the execution of some programs due to increased system requirements. While the **Advanced heuristics on executing files from removable media** option is enabled, if you wish to exclude some removable media (USB) ports from being scanned by advanced heuristics on file execution, click **Exceptions...** to open the removable media drive exclusions window. From here, you can customize the settings by selecting or deselecting the checkboxes that represent each port.

4.1.1.1.4 Cleaning levels

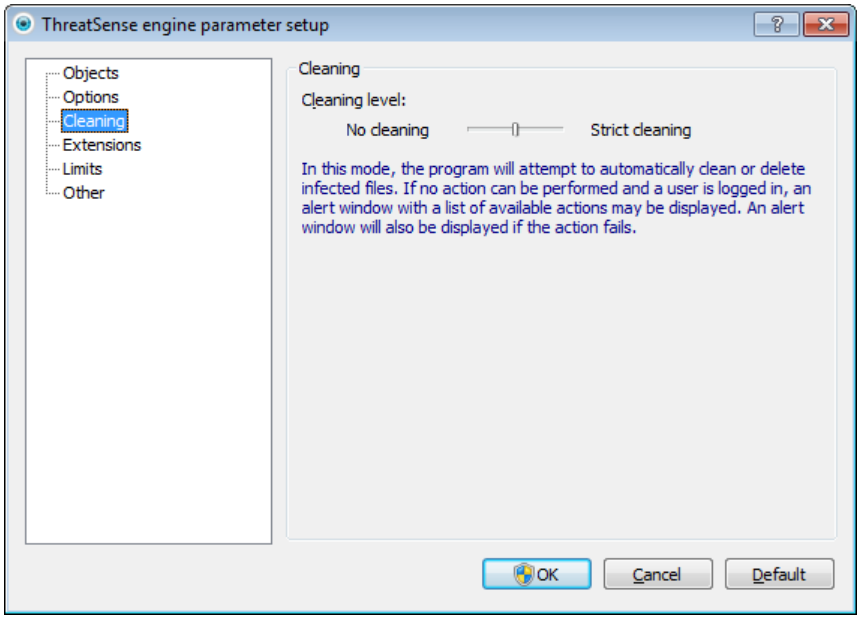
The real-time protection has three cleaning levels (to access, click the **Setup...** button in the **Real-time file system protection** section and then click the **Cleaning** branch).

No cleaning – Infected files will not be cleaned automatically. The program will display a warning window and allow the user to choose an action. This level is designed for more advanced users who know which steps to take in the event of an infiltration.

Standard cleaning – The program will attempt to automatically clean or delete an infected file based on a predefined action (depending on the type of infiltration). Detection and deletion of an infected file is signaled by an information message located in the bottom-right corner of the screen. If it is not possible to select the correct action automatically, the program offers a selection of follow-up actions. The same happens when a predefined action cannot be completed.

Strict cleaning – The program will clean or delete all infected files. The only exceptions are the system files. If it is not possible to clean them, the user is prompted to select an action by a warning window.

Warning: If an archive contains a file or files which are infected, there are two options for dealing with the archive. In standard mode (Standard cleaning), the whole archive would be deleted if all the files it contains are infected files. In **Strict cleaning** mode, the archive would be deleted if it contains at least one infected file, regardless of the status of the other files in the archive.


ThreatSense engine parameter setup
Objects
Options
Cleaning
Extensions
Limits
Other
Cleaning
Cleaning level:
No cleaning
Strict cleaning
In this mode, the program will attempt to automatically clean or delete infected files. If no action can be performed and a user is logged in, an alert window with a list of available actions may be displayed. An alert window will also be displayed if the action fails.
OK
Cancel
Default

4.1.1.1.5 When to modify real-time protection configuration

Real-time protection is the most essential component of maintaining a secure system. Always be careful when modifying its parameters. We recommend that you only modify its parameters in specific cases. For example, if there is a conflict with a certain application or real-time scanner of another antivirus program.

After installating ESET Smart Security, all settings are optimized to provide the maximum level of system security for users. To restore the default settings, click the **Default** button located at the bottom-right of the **Real-time file system protection** window (**Advanced setup** > **Computer** > **Antivirus and antispyware** > **Real-time file system protection**).

4.1.1.1.6 Checking real-time protection

To verify that real-time protection is working and detecting viruses, use a test file from eicar.com. This test file is a special harmless file detectable by all antivirus programs. The file was created by the EICAR company (European Institute for Computer Antivirus Research) to test the functionality of antivirus programs. The file eicar.com is available for download at http://www.eicar.org/download/eicar.com

NOTE: Before performing a real-time protection check, it is necessary to disable the firewall. If the firewall is enabled, it will detect the file and prevent test files from downloading.

4.1.1.1.7 What to do if real-time protection does not work

In this chapter, we describe problem situations that may arise when using real-time protection, and how to troubleshoot them.

Real-time protection is disabled

If real-time protection was inadvertently disabled by a user, it needs to be reactivated. To reactivate real-time protection, navigate to **Setup** in the main program window and click **Real-time file system protection**.

If real-time protection is not initiated at system startup, it is usually because the **Start Real-time file system protection automatically** option is deselected. To enable this option, navigate to Advanced setup (F5) and click **Computer** > **Antivirus and antispyware** > **Real-time file system protection** in the Advanced setup tree. In the **Advanced setup** section at the bottom of the window, make sure that the **Start Real-time file system protection automatically** checkbox is selected.

If Real-time protection does not detect and clean infiltrations

Make sure that no other antivirus programs are installed on your computer. If two real-time protection shields are enabled at the same time, they may conflict with each other. We recommend that you uninstall any other antivirus programs on your system.

Real-time protection does not start

If real-time protection is not initiated at system startup (and the **Start Real-time file system protection automatically** option is enabled), it may be due to conflicts with other programs. If this is the case, please contact ESET Customer Care.

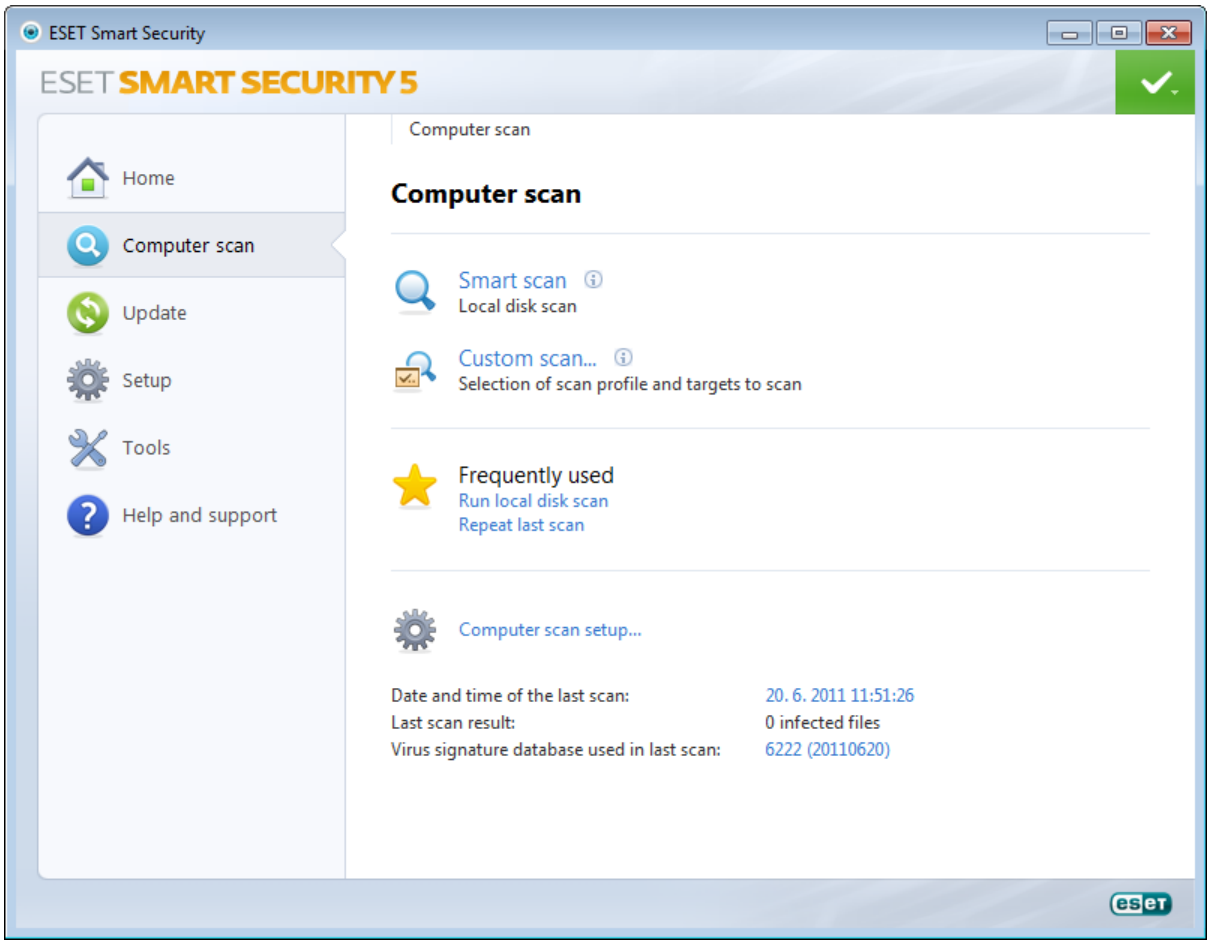
4.1.1.2 Document protection

The Document protection feature scans Microsoft Office documents before they are opened, as well as files downloaded automatically by Internet Explorer such as Microsoft ActiveX elements. **Integrate into system** activates the protection system. To modify this option, press F5 to open the Advanced setup window and click **Computer** > **Antivirus and antispyware** > **Document protection** in the Advanced setup tree. When activated, Document protection can be viewed in the main program window of ESET Smart Security in **Setup** > **Computer**.

This feature is activated by applications that use Microsoft Antivirus API (e.g., Microsoft Office 2000 and higher, or Microsoft Internet Explorer 5.0 and higher).

4.1.1.3 Computer scan

The on-demand scanner is an important part of your antivirus solution. It is used to perform scans of files and folders on your computer. From a security point of view, it is essential that computer scans are not just run when an infection is suspected, but regularly as part of routine security measures. We recommend that you perform regular in-depth scans of your system to detect viruses which were not captured by the Real-time file system protection when they were written to the disk.This can happen if the Real-time file system protection was disabled at the time, the virus database was obsolete or the file was not detected as a virus when it was saved to the disk.



Two types of **Computer scan** are available. **Smart scan** quickly scans the system with no need for further configuration of the scan parameters. **Custom scan** allows you to select any of the predefined scan profiles, as well as choose specific scan targets.

See the Scan progress chapter for more information about the scanning process.

We recommend that you run a computer scan at least once a month. Scanning can be configured as a scheduled task from **Tools** > **Scheduler**.

4.1.1.3.1 Type of scan

4.1.1.3.1.1 Smart scan

Smart scan allows you to quickly launch a computer scan and clean infected files with no need for user intervention. The advantage of Smart scan is it is easy to operate and does not require detailed scanning configuration. Smart scan checks all files on local drives and automatically cleans or deletes detected infiltrations. The cleaning level is automatically set to the default value. For more detailed information on types of cleaning, see section Cleaning.

4.1.1.3.1.2 Custom scan

Custom scan is an optimal solution if you wish to specify scanning parameters such as scan targets and scanning methods. The advantage of Custom scan is the ability to configure the parameters in detail. Configurations can be saved to user-defined scan profiles, which can be useful if scanning is repeatedly performed with the same parameters.

To select scan targets, select **Computer scan** > **Custom scan** and select an option from the **Scan targets** drop-down menu or select specific targets from the tree structure. A scan target can also be specified by entering the path of the folder or file(s) you wish to include. If you are only interested in scanning the system without additional cleaning actions, select the **Scan without cleaning** option. Furthermore, you can choose from three cleaning levels by clicking **Setup...** > **Cleaning**.

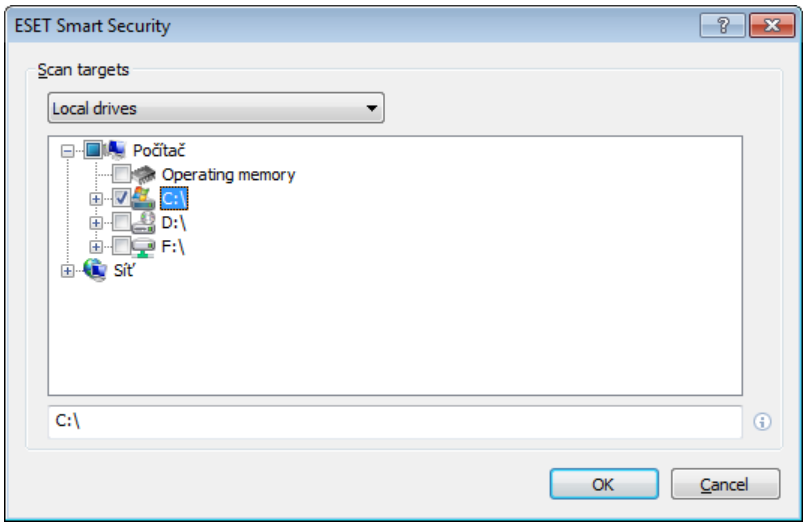
Performing computer scans with Custom scan is suitable for advanced users with previous experience using antivirus programs.

4.1.1.3.2 Scan targets

Scan targets window allows you to define which objects (memory, drives, sectors, files and folders) are scanned for infiltrations. The **Scan targets** drop-down menu allows you to select predefined scan targets.

- **By profile settings** – Selects targets set in the selected scan profile.
- **Removable media** – Selects diskettes, USB storage devices, CD/DVD.
- **Local drives** – Selects all system hard drives.
- **Network drives** – Selects all mapped network drives.
- **No selection** – Cancels all selections.

A scan target can also be specified by entering the path to the folder or file(s) you wish to include in scanning. Select targets from the tree structure, which lists all devices available on the computer.



To quickly navigate to a scan target or to directly add a desired target, enter it in the blank field below the folder list. This is only possible if no targets were selected in the tree structure and the **Scan targets** menu is set to **No selection**.

4.1.1.3.3 Scan profiles

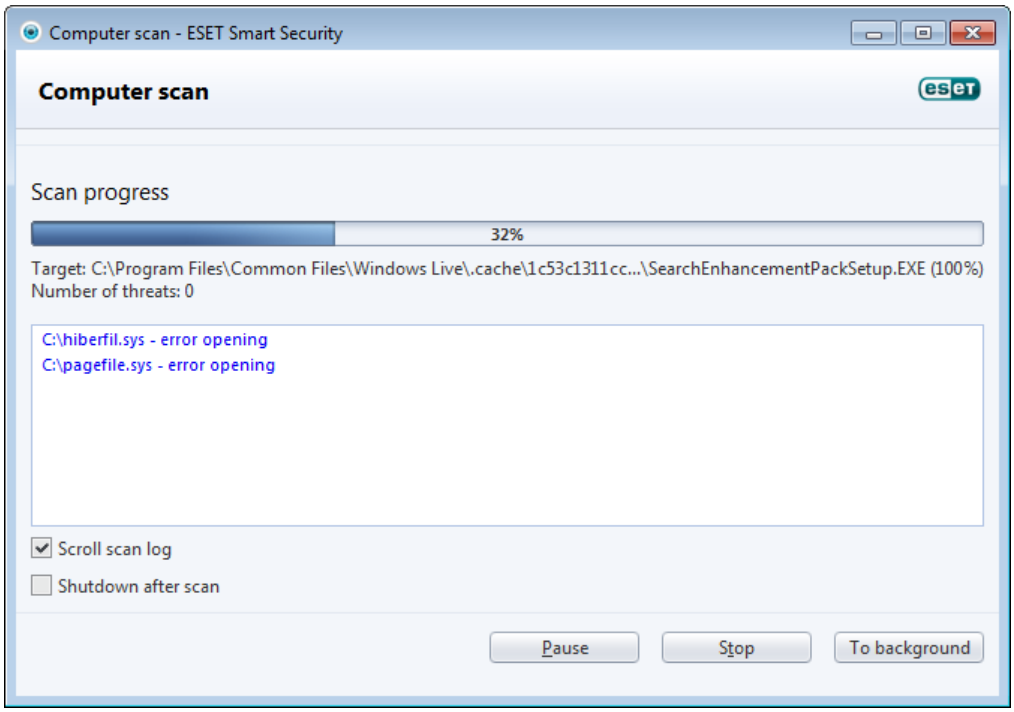
Your preferred scan parameters can be saved for future scanning. We recommend that you create a different profile (with various scan targets, scan methods and other parameters) for each regularly used scan.

To create a new profile, open the Advanced setup window (F5) and click **Computer** > **Antivirus and antispyware** > **Computer scan** > **Profiles...**. The **Configuration profiles** window includes the **Selected profile** drop-down menu that lists existing scan profiles and the option to create a new one. To help you create a scan profile to fit your needs, see the ThreatSense engine parameters setup section for a description of each parameter of the scan setup.

Example: Suppose that you want to create your own scan profile and the Smart scan configuration is partially suitable, but you don't want to scan runtime packers or potentially unsafe applications and you also want to apply **Strict cleaning**. In the **Configuration profiles** window, click the **Add...** button. Enter the name of your new profile in the **Profile name** field and select **Smart scan** from the **Copy settings from profile** drop-down menu. Then, adjust the remaining parameters to meet your requirements.

4.1.1.3.4 Scan progress

The scan progress window shows the current status of the scan and information about the number of files found that contain malicious code.



NOTE: It is normal that some files, such as password protected files or files exclusively being used by the system (typically *pagefile.sys* and certain log files), cannot be scanned.

Scan progress – The progress bar shows the percentage of already-scanned objects compared to objects still waiting be scanned. The value is derived from the total number of objects included in scanning.

Target – The name of the currently scanned object and its location.

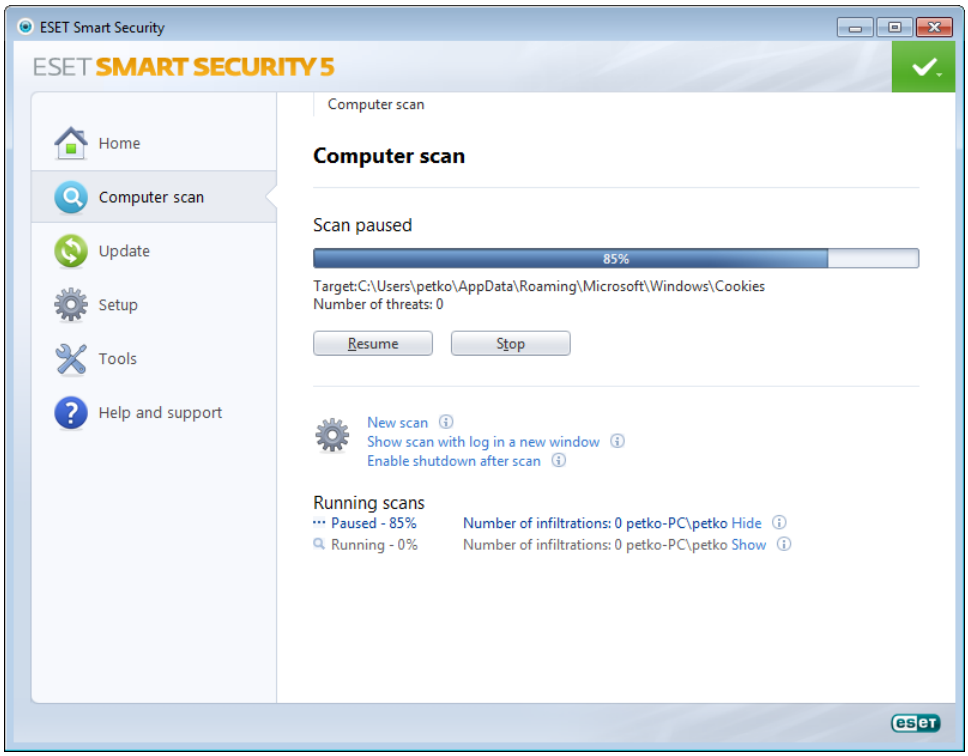
Number of threats – Shows the total number of threats found during a scan.

Pause – Pauses a scan.

Resume – This option is visible when scan progress is paused. Click **Resume** to continue scanning.

Stop – Terminates the scan.

To background – You can run another parallel scan. The running scan will be minimized to the background.



Click **Show** to bring a scan to the foreground and return to the scanning process.

Scroll scan log – If enabled, the scan log will scroll down automatically as new entries are added so that the most recent entries are visible.

Enable shutdown after scan – Enables a scheduled shutdown when the on-demand computer scan finishes. A shutdown confirmation dialog window will open with a 60 second timeout. Click **Cancel** if you wish to deactivate the requested shutdown.

4.1.1.4 Startup scan

The automatic startup file check will be performed on system startup or virus signature database update. This scan is dependent upon the Scheduler configuration and tasks.

The startup scan options is part of a **System startup file check** scheduler task. To modify its settings, navigate to **Tools** > **Scheduler**, click **Automatic startup file check** and the **Edit...** button. In the last step, the Automatic startup file check window will appear (see the following chapter for more details).

For detailed instructions about Scheduler task creation and management, see Creating new tasks.

4.1.1.4.1 Automatic startup file check

The **Scan level** drop-down menu specifies the scan depth for files run at system startup. Files are arranged in ascending order by the number of files to scan:

- **Only the most frequently used files** (least files scanned)
- **Frequently used files**
- **Commonly used files**
- **Rarely used files**
- **All registered files** (most files scanned)

Two specific **Scan level** groups are also included:

- **Files run before user logon** – Contains files from locations that allow running these files without the user being logged in (includes almost all startup locations such as services, browser helper objects, winlogon notify, Windows scheduler entries, known dlls, etc.).
- **Files run after user logon** – Contains files from locations, that allow running them only after a user has logged in (includes files that are only run for specific user, typically files in *HKEY_CURRENT_USER\SOFTWARE\Microsoft\Windows\CurrentVersion\Run*)

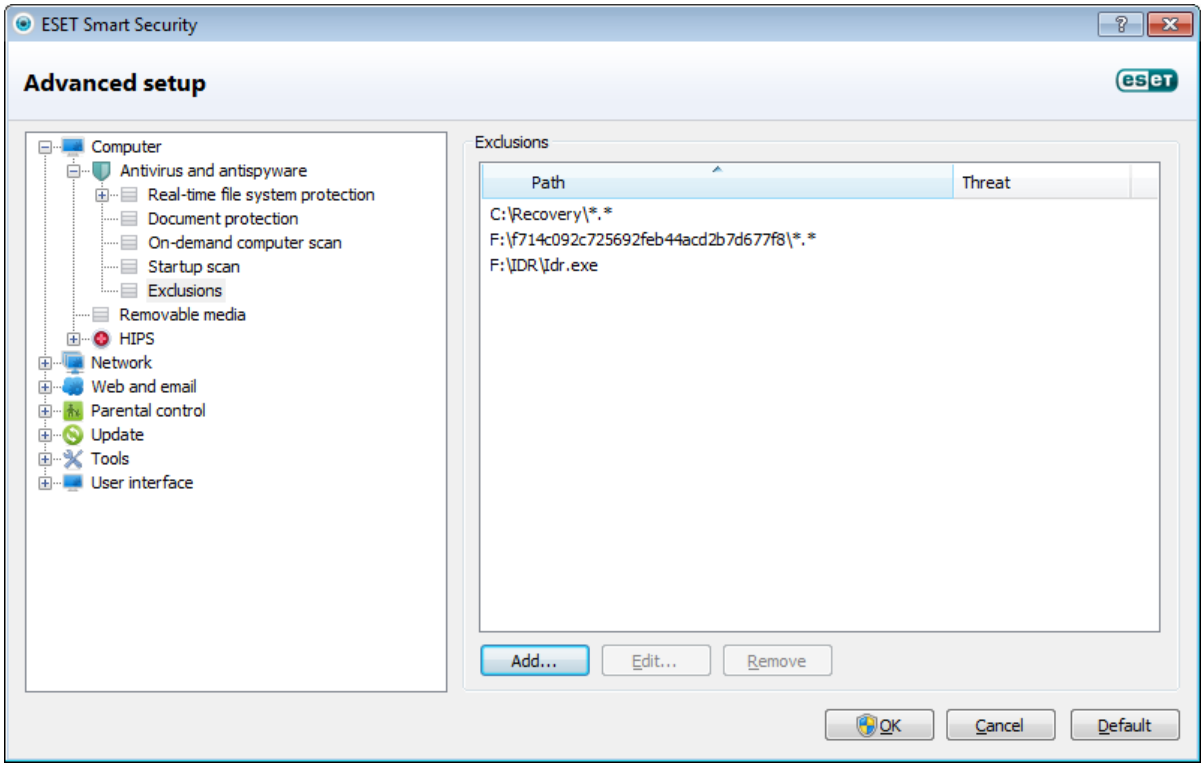
Lists of files to be scanned are fixed for each group.

Scan priority – A level of priority to use for the scan start:

- **Normal** – at an average system load,
- **Lower** – at a low system load,
- **Lowest** – when the system load is the lowest possible,
- **When idle** – the task will be performed only when the system is idle.

4.1.1.5 Exclusions by path

Exclusions enable you to exclude files and folders from scanning. We do not recommend that you alter these options, to ensure that all objects are scanned for threats. However, there are situations where you may need to exclude an object. For example, large database entries that would slow down the computer during the scan or software that has conflicts with the scan.



Path – Path to excluded files and folders.

Threat – If there is a name of a threat next to an excluded file, it means that the file is only excluded for the given threat, not completely. Therefore if that file becomes infected later with other malware, it will be detected by the antivirus module. This type of exclusion can only be used for certain types of infiltrations and it can be created either in the threat alert window reporting the infiltration (click **Show advanced options** and then select **Exclude from detection**), or in **Setup** > **Quarantine** using the context menu option **Restore and exclude from detection** on the quarantined file.

Add... – Excludes objects from detection.

Edit... – Enables you to edit selected entries.

Remove – Removes selected entries.

To exclude an object from scanning:

1. Click **Add...**,
2. Enter the path to an object or select it in the tree structure.

You can use wildcards to cover a group of files. A question mark (?) represents a single variable character whereas an asterisk (*) represents a variable string of zero or more characters.

Examples

- If you wish to exclude all files in a folder, type the path to the folder and use the mask "*.*".
- To exclude an entire drive including all files and subfolders, use the mask "D:*".
- If you want to exclude doc files only, use the mask "*.doc".
- If the name of an executable file has a certain number of characters (and characters vary) and you only know the first one for sure (say "D"), use the following format: "D????.exe". Question marks replace the missing (unknown) characters.

4.1.1.6 ThreatSense engine parameters setup

ThreatSense is technology consists of many complex threat detection methods. This technology is proactive, which means it also provides protection during the early hours of the spread of a new threat. It uses a combination of several methods (code analysis, code emulation, generic signatures, virus signatures) which work in concert to significantly enhance system security. The scanning engine is capable of controlling several data streams simultaneously, maximizing the efficiency and detection rate. ThreatSense technology also successfully eliminates rootkits.

The ThreatSense technology setup options allow you to specify several scan parameters:

- File types and extensions that are to be scanned,
- The combination of various detection methods,
- Levels of cleaning, etc.

To enter the setup window, click the **Setup...** button located in any module's setup window which uses ThreatSense technology (see below). Different security scenarios could require different configurations. With this in mind, ThreatSense is individually configurable for the following protection modules:

- Real-time file system protection,
- Document protection,
- Email client protection,
- Web access and antiphishing protection,
- and Computer scan.

ThreatSense parameters are highly optimized for each module, and their modification can significantly influence system operation. For example, changing parameters to always scan runtime packers, or enabling advanced heuristics in the Real-time file system protection module could result in a system slow-down (normally, only newly-created files are scanned using these methods). We recommend that you leave the default ThreatSense parameters unchanged for all modules except Computer scan.

4.1.1.6.1 Objects

The **Objects** section allows you to define which computer components and files will be scanned for infiltrations.

Operating memory – Scans for threats that attack the operating memory of the system.

Boot sectors – Scans boot sectors for the presence of viruses in the master boot record.

Email files – The program supports the following extensions: DBX (Outlook Express) and EML.

Archives – The program supports the following extensions: ARJ, BZ2, CAB, CHM, DBX, GZIP, ISO/BIN/NRG, LHA, MIME, NSIS, RAR, SIS, TAR, TNEF, UUE, WISE, ZIP, ACE, and many others.

Self-extracting archives – Self-extracting archives (SFX) are archives needing no specialized programs – archives – to decompress themselves.

Runtime packers – After executing, runtime packers (unlike standard archive types) decompress in memory. In addition to standard static packers (UPX, yoda, ASPack, FSG, etc.), the scanner supports (thanks to code emulation) many more types of packers.

4.1.1.6.2 Options

Use the **Options** section to select the methods used when scanning the system for infiltrations. The following options are available:

Heuristics – A heuristic is an algorithm analyzing the (malicious) activity of programs. The main advantage is the ability to identify malicious software which did not exist, or was not known by the previous virus signatures database. The disadvantage is a (very small) probability of false alarms.

Advanced heuristics/DNA/Smart signatures – Advanced heuristics consist of a unique heuristic algorithm developed by ESET, optimized for detecting computer worms and trojan horses and written in high level programming languages. Thanks to advanced heuristics, the detecting capabilities of the program are significantly higher. Signatures can reliably detect and identify viruses. Utilizing the automatic update system, new signatures are available within a few hours of a threat discovery. The disadvantage of signatures is that they only detect viruses they know (or their slightly modified versions).

Potentially unwanted applications (PUAs) are not necessarily intended to be malicious, but may affect the performance of your computer in a negative way. Such applications usually require consent for installation. If they are present on your computer, your system behaves differently (compared to the state before their installation). The most significant changes are:

- New windows you haven't seen previously (pop-ups, ads),
- Activating and running of hidden processes,
- Increased usage of system resources,
- Changes in search results,
- Application communicates with remote servers.

Potentially unsafe applications – Potentially unsafe applications is the classification used for commercial, legitimate software. It includes programs such as remote access tools, password-cracking applications, and keyloggers (programs recording each keystroke typed by a user). This option is disabled by default.

ESET Live Grid – Thanks to ESET's reputation technology, information about scanned files is verified against data from the cloud-based ESET Live Grid to improve detection and scanning speed.

4.1.1.6.3 Cleaning

The cleaning settings determine the behavior of the scanner while cleaning infected files. There are 3 levels of cleaning:

No cleaning – Infected files will not be cleaned automatically. The program will display a warning window and allow the user to choose an action. This level is designed for more advanced users who know which steps to take in the event of an infiltration.

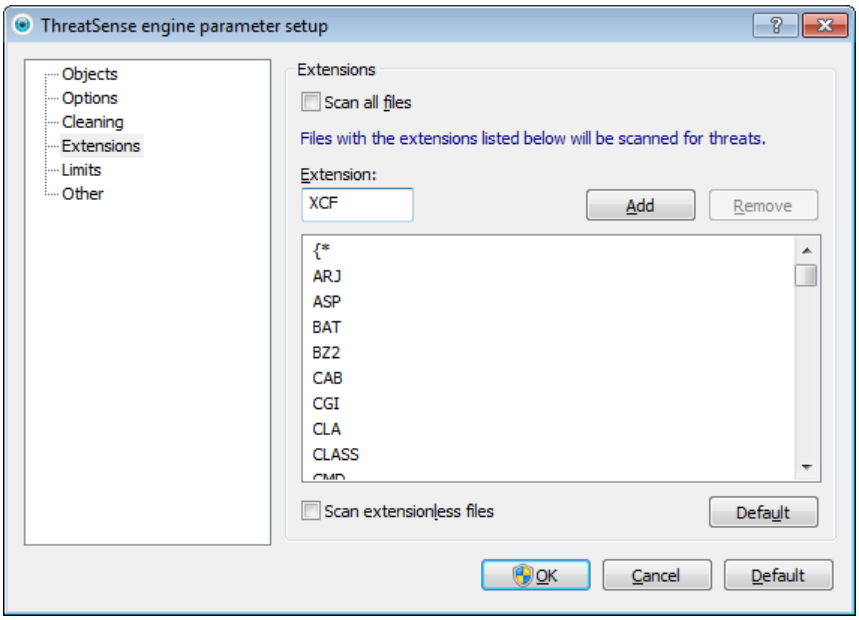
Standard cleaning – The program will attempt to automatically clean or delete an infected file based on a predefined action (depending on the type of infiltration). Detection and deletion of an infected file is signaled by an information message located in the bottom-right corner of the screen. If it is not possible to select the correct action automatically, the program offers a selection of follow-up actions. The same happens when a predefined action cannot be completed.

Strict cleaning – The program will clean or delete all infected files. The only exceptions are the system files. If it is not possible to clean them, the user is prompted to select an action by a warning window.

Warning: If an archive contains a file or files which are infected, there are two options for dealing with the archive. In standard mode (Standard cleaning), the whole archive would be deleted if all the files it contains are infected files. In **Strict cleaning** mode, the archive would be deleted if it contains at least one infected file, regardless of the status of the other files in the archive.

4.1.1.6.4 Extension

An extension is a part of a file name delimited by a period. An extension defines the type and content of a file. This section of the ThreatSense parameter setup lets you define the types of files to scan.



By default, all files are scanned regardless of their extension. Any extension can be added to the list of files excluded from scanning. If the **Scan all files** option is deselected, the list changes to show all currently scanned file extensions.

To enable scanning files without an extension, select the **Scan extensionless files** option. The **Do not scan extensionless files** option becomes available when the **Scan all files** option is enabled.

Excluding files is sometimes necessary if scanning certain file types prevents the program which is using the extensions from running properly. For example, it may be advisable to exclude the .edb, .eml and .tmp extensions when using Microsoft Exchange servers.

Using the **Add** and **Remove** buttons, you can allow or prohibit scanning of specific file extensions. Typing an **Extension** activates the **Add** button, which adds the new extension to the list. Select an extension in the list and then click the **Remove** button to delete that extension from the list.

The special symbols * (asterisk) and ? (question mark) can be used. The asterisk substitutes any character string, and the question mark substitutes any symbol. Particular care should be taken when specifying excluded addresses, because the list should only contain trusted and safe addresses. Similarly, it is necessary to ensure that the symbols * and ? are used correctly in this list.

To scan the default set of extensions only, click on the **Default** button and click **Yes** when prompted to confirm.

4.1.1.6.5 Limits

The Limits section allows you to specify the maximum size of objects and levels of nested archives to be scanned:

Maximum object size – Defines the maximum size of objects to be scanned. The given antivirus module will then scan only objects smaller than the size specified. This option should only be changed by advanced users who may have specific reasons for excluding larger objects from scanning. Default value: *unlimited*.

Maximum scan time for object (sec.) – Defines the maximum time value for scanning of an object. If a user-defined value has been entered here, the antivirus module will stop scanning an object when that time has elapsed, regardless of whether the scan has finished. Default value: *unlimited*.

Archive nesting level – Specifies the maximum depth of archive scanning. Default value: *10*.

Maximum size of file in archive – This option allows you to specify the maximum file size for files contained in archives (when they are extracted) that are to be scanned. Default value: *unlimited*.

If scanning of an archive is prematurely terminated for these reasons, the archive checkbox will remain unchecked.

Note: We do not recommend changing the default values; under normal circumstances, there should be no reason to modify them.

4.1.1.6.6 Other

You can configure the following options in the **Other** section:

Log all objects – If this option is selected, the log file will show all the scanned files, even those not infected. For example, if an infiltration is found within an archive, the log will list also clean files contained within the archive.

Enable Smart optimization – With Smart Optimization enabled, the most optimal settings are used to ensure the most efficient scanning level, while simultaneously maintaining the highest scanning speeds. The various protection modules scan intelligently, making use of different scanning methods and applying them to specific file types. If the Smart Optimization is disabled, only the user-defined settings in the ThreatSense core of the particular modules are applied when performing a scan.

When configuring ThreatSense engine parameters setup for a Computer scan, the following options are also available:

Scan alternate data streams (ADS) – Alternate data streams used by the NTFS file system are file and folder associations which are invisible by ordinary scanning techniques. Many infiltrations try to avoid detection by disguising themselves as alternate data streams.

Run background scans with low priority – Each scanning sequence consumes a certain amount of system resources. If you work with programs that place a high load on system resources, you can activate low priority background scanning and save resources for your applications.

Preserve last access timestamp – Select this option to keep the original access time of scanned files instead of updating them (e.g., for use with data backup systems).

Scroll scan log – This option allows you to enable/disable log scrolling. If selected, information scrolls upwards within the display window.

4.1.1.7 An infiltration is detected

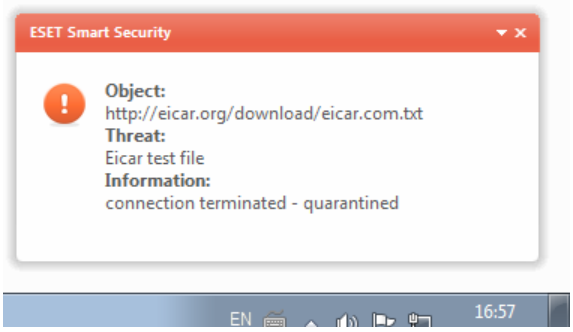
Infiltrations can reach the system from various entry points such as webpages, shared folders, via email or from removable devices (USB, external disks, CDs, DVDs, diskettes, etc.).

Standard behavior

As a general example of how infiltrations are handled by ESET Smart Security, infiltrations can be detected using

- Real-time file system protection,
- Web access and antiphishing protection,
- Email client protection, or
- On-demand computer scan,

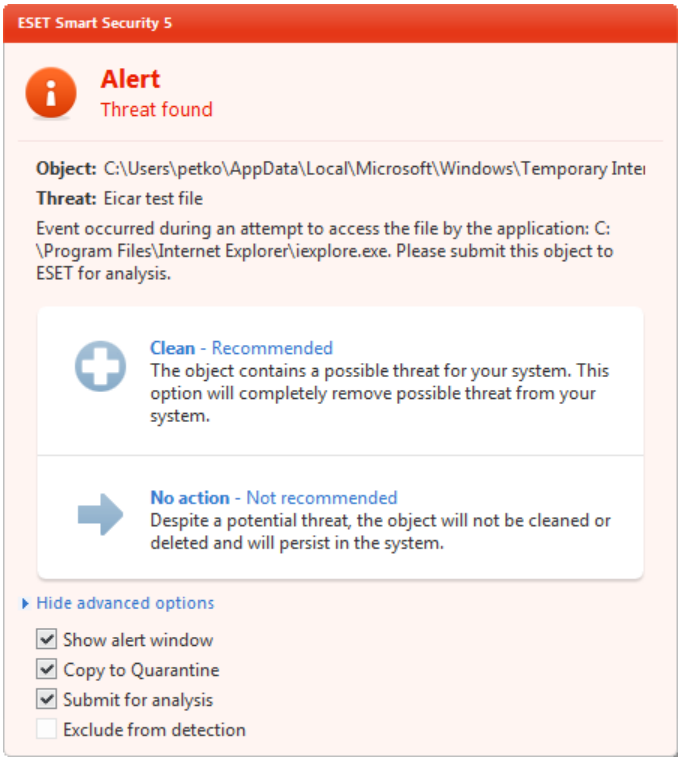
Each uses the standard cleaning level and will attempt to clean the file and move it to Quarantine or terminate the connection. A notification window is displayed in the notification area at the bottom right corner of the screen. For more information about cleaning levels and behavior, see Cleaning.



Cleaning and deleting

If there is no predefined action to take for Real-time file system protection, you will be asked to select an option in an alert window. Usually the options **Clean**, **Delete** and **No action** are available. Selecting **No action** is not recommended, as this will leave infected files uncleaned. The exception to this is when you are sure that a file is harmless and has been detected by mistake.

Apply cleaning if a file has been attacked by a virus that has attached malicious code to the file. If this is the case, first attempt to clean the infected file in order to restore it to its original state. If the file consists exclusively of malicious code, it will be deleted.


ESET Smart Security 5
Alert
Threat found
Object: C:\Users\petko\AppData\Local\Microsoft\Windows\Temporary Inte
Threat: Eicar test file
Event occurred during an attempt to access the file by the application: C:\Program Files\Internet Explorer\iexplore.exe. Please submit this object to ESET for analysis.
Clean - Recommended
The object contains a possible threat for your system. This option will completely remove possible threat from your system.
No action - Not recommended
Despite a potential threat, the object will not be cleaned or deleted and will persist in the system.
Hide advanced options
Show alert window
Copy to Quarantine
Submit for analysis
Exclude from detection

If an infected file is "locked" or in use by a system process, it will usually only be deleted after it is released (normally after a system restart).

Deleting files in archives

In Default cleaning mode, the entire archive will be deleted only if it contains infected files and no clean files. In other words, archives are not deleted if they also contain harmless clean files. Use caution when performing a Strict cleaning scan, with Strict cleaning the archive will be deleted if it contains at least one infected file regardless of the status of other files in the archive.

If your computer is showing signs of a malware infection, e.g., it is slower, often freezes, etc., we recommend that you do the following:

- Open ESET Smart Security and click Computer scan,
- Click **Smart scan** (for more information, see Smart scan),
- After the scan has finished, review the log for the number of scanned, infected and cleaned files.

If you only wish to scan a certain part of your disk, click **Custom scan** and select targets to be scanned for viruses.

4.1.2 Removable media

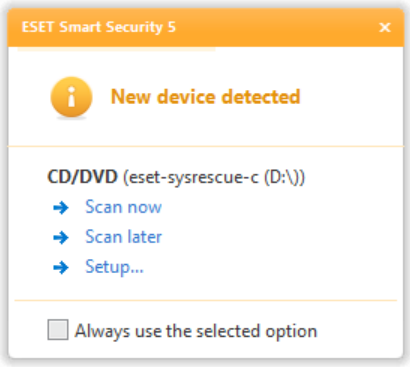
ESET Smart Security provides automatic removable media (CD/DVD/USB/…) control. This module allows you to scan, block or adjust extended filters/permissions and select how the user can access and work with a given device. This may be useful if the computer administrator wishes to prevent the users from using removable media with unsolicited content.

Supported removable media

- CD/DVD/Blu-ray
- USB key
- USB drive
- FireWire

Action to take after inserting removable media – Select the default action that will be performed when a removable media device is inserted into the computer (CD/DVD/USB). If the **Show scan options** option is selected, a notification will display which allows you to choose a desired action:

- **Scan now** – An on-demand computer scan of the inserted removable media device will be performed.
- **Scan later** – No action will be performed and the **New device detected** window will be closed.
- **Setup...** – Opens the Removable media setup section.

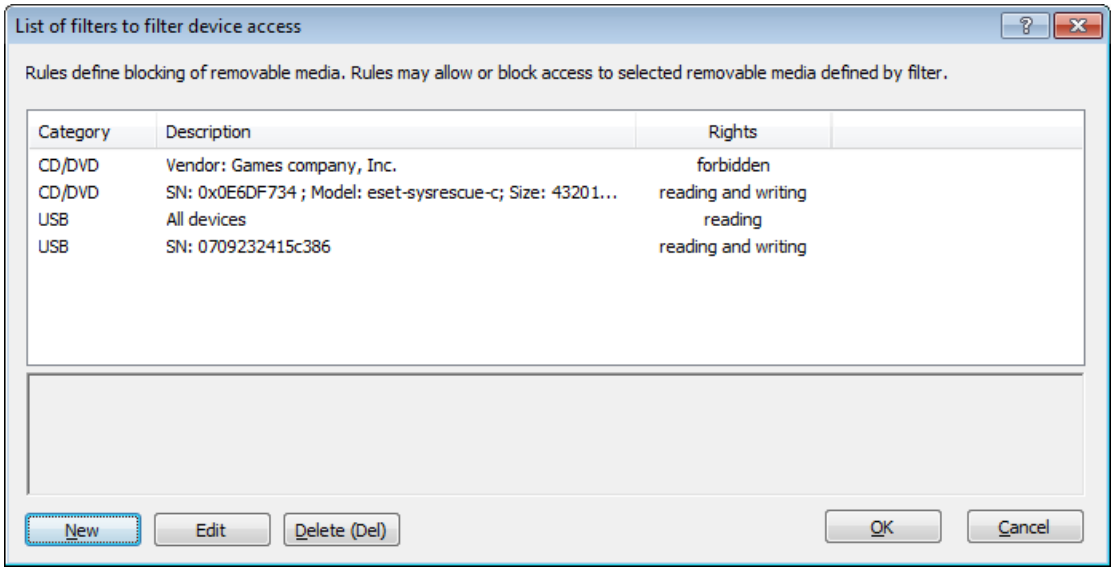


Removable media blocking rules – Select this option to block all removable media connected to the computer. If you wish some media to be available, then exclude it from blocking.

Click **Rules...** to allow or block access to selected removable media. You can manage extended rules for removable media in this window. Rules can be filtered for example by media size, serial number and device type. Each rule has its own permissions, so you can allow, limit or block access to the selected removable media. More details on removable media scanning and blocking can be found in the Filter device access chapter.

4.1.2.1 Filter device access

The Filter device access window displays existing extended rules for removable media.



Category – Removable media type (CD/DVD/USB).

Description – Filter device rules description.

Rights – Associated permissions of given devices, that match the criteria set by filter.

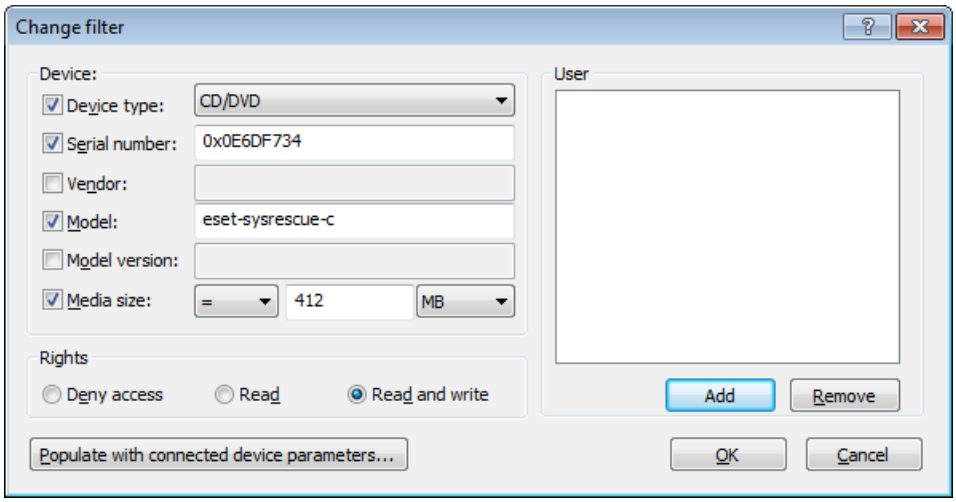
New – Create a new filtering removable media rule.

Edit – Select one row and click this button to change the existing rule.

Delete (Del) – Removes the selected rule.

4.1.2.2 New/Change filter

This window allows you to create or modify the existing filtering rule.



Device

- **Device type** – Choose the removable media type from the list (CD/DVD/USB).
- **Serial number** – A removable media has usually its own serial number. In case of CD/DVD, there is a serial number of given media, not CD drive.
- **Vendor** – Filtering by vendor name or ID.
- **Model** – The given name of the device.
- **Model version** – Optional, the version of the given device, if it's available.
- **Media size** – By enabling this option you can define conditional filter devices (greater than, equal, lower than) by media size (bytes, megabytes, etc.).

Rights

- **Deny access** – Access to the device will not be granted.
- **Read** – User can read files from a given removable media.
- **Read and write** – Full control over the removable media.

User

- **Add** – Opens the **Object type: Users or Groups** dialog window, that allows you to select desired users.
- **Remove** – Removes the selected user from the filter.

Populate with connected device parameters... – Click this option to choose/fill with connected removable media device parameters on your computer.

4.1.3 Host-based Intrusion Prevention System (HIPS)

Host-based Intrusion Prevention System (HIPS) protects your system from malware and unwanted activity attempting to negatively affect your computer. HIPS utilizes advanced behavioral analysis coupled with the detection capabilities of network filtering to monitor running processes, files and registry keys. HIPS is separate from Real-time file system protection and is not a firewall; it monitors only processes running within the operating system.

HIPS can be found in **Advanced setup** (F5) by clicking on **Computer** > **HIPS**. The HIPS state (enabled/disabled) is shown in the ESET Smart Security main window, in the **Setup** pane, on the right side of the **Computer** section.

HIPS settings are located in **Advanced setup** (F5). To access HIPS in the Advanced Setup tree, click **Computer** > **HIPS**. The HIPS state (enabled/disabled) is displayed in the ESET Smart Security main window, in the **Setup** pane on the right side of the Computer section.

Warning: Changes to the HIPS settings should only be made by an experienced user.

ESET Smart Security has a built-in *Self-defense* technology that prevents malicious software from corrupting or disabling your antivirus and antispyware protection, so you can be sure your system is protected all the times. Changes to the **Enable HIPS** and **Enable Self-defense** settings take effect after the Windows operating system is restarted. Disabling the entire **HIPS** system will also require a computer restart.

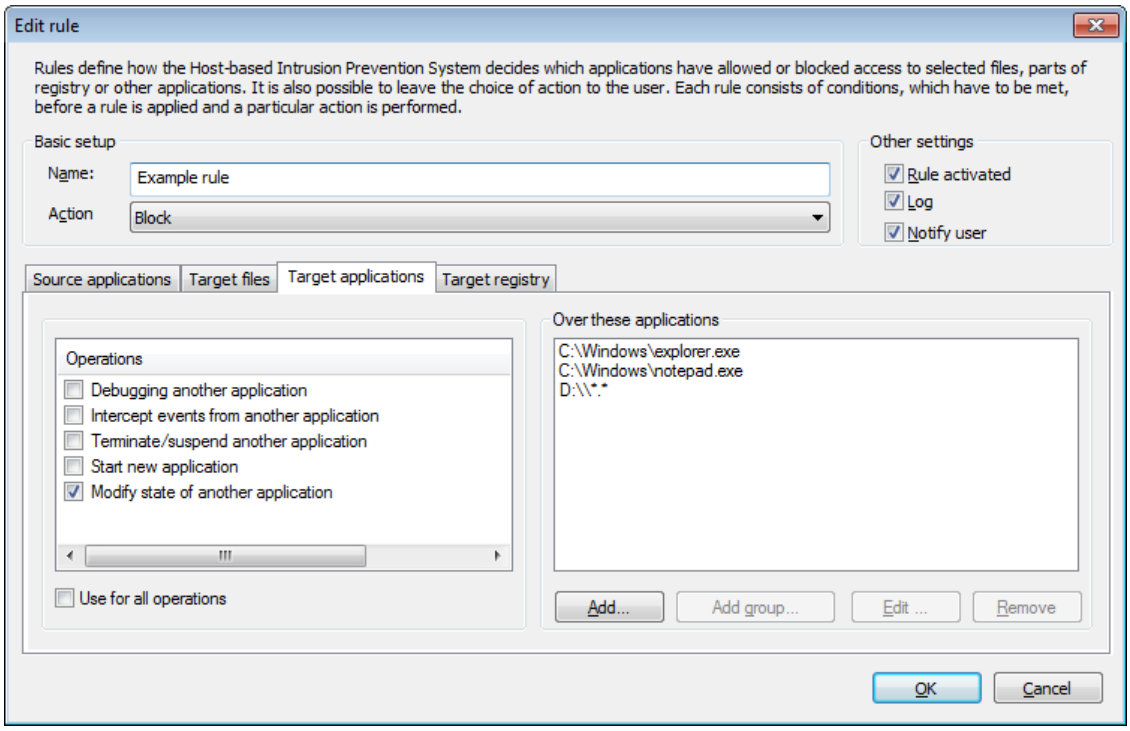
Filtering can be performed in one of four modes:

- **Automatic mode with rules** – Operations are enabled, except pre-defined rules that protect your system.
- **Interactive mode** – User will be prompted to confirm operations.
- **Policy-based mode** – Operations are blocked.
- **Learning mode** – Operations are enabled and a rule is created after each operation. Rules created in this mode can be viewed in the **Rule editor**, but their priority is lower than the priority of rules created manually or rules created in the automatic mode. After selecting **Learning mode**, the **Notify about learning mode expiration in X days** option becomes active. After that time period is over, learning mode is disabled again. The maximum time period is 14 days. After this time period is over, a pop-up window will open in which you can edit the rules and select a different filtering mode.

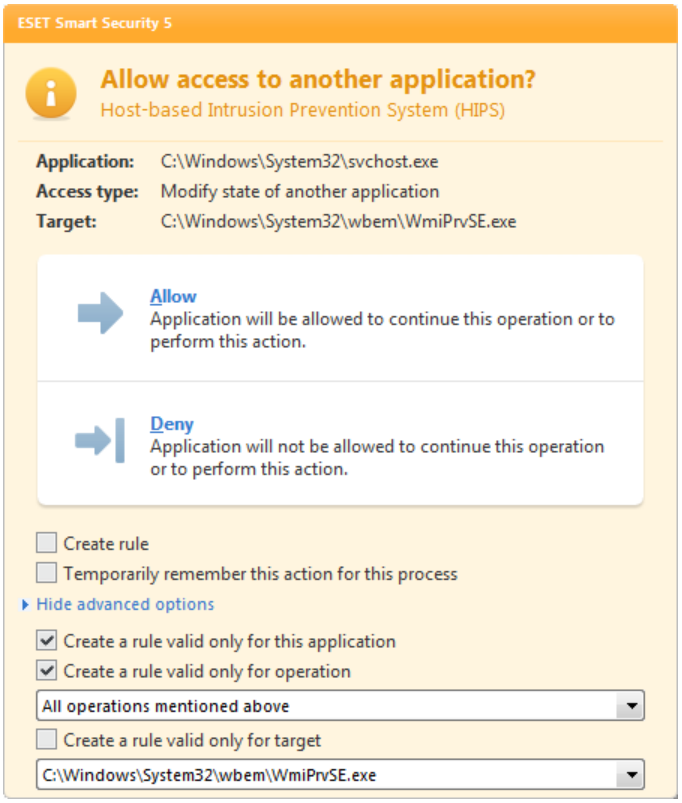
The HIPS system monitors events inside the operating system and reacts accordingly based on rules similar to the rules used by the personal firewall. Click **Configure rules...** to open the HIPS rule management window. Here you can select, create, edit or delete rules.

In the following example, we will demonstrate how to restrict unwanted behavior of applications:

1. Name the rule and select **Block** from the **Action** drop-down menu.
2. Open the **Target applications** tab. Leave the **Source applications** tab blank to apply your new rule to all applications attempting to perform any of the checked operations in the **Operations** list on applications in the **Over these applications** list.
3. Select **Modify state of another application** (all operations are described in the product help, press F1 key in the window which is identical to the image below).
4. Add one or several applications you wish to protect.
5. Enable the **Notify user** option to display a user notification whenever the rule is applied.
6. Click **OK** to save the new rule.



A dialog window is shown every time if **Ask** is the default action. It allows the user to choose to **Deny** or **Allow** the operation. If the user does not choose an action in the given time, a new action is selected based on the rules.


ESET Smart Security 5
Allow access to another application?
Host-based Intrusion Prevention System (HIPS)
Application: C:\Windows\System32\svchost.exe
Access type: Modify state of another application
Target: C:\Windows\System32\wbem\WmiPrvSE.exe
Allow
Application will be allowed to continue this operation or to perform this action.
Deny
Application will not be allowed to continue this operation or to perform this action.
Create rule
Temporarily remember this action for this process
Hide advanced options
Create a rule valid only for this application
Create a rule valid only for operation
All operations mentioned above
Create a rule valid only for target
C:\Windows\System32\wbem\WmiPrvSE.exe

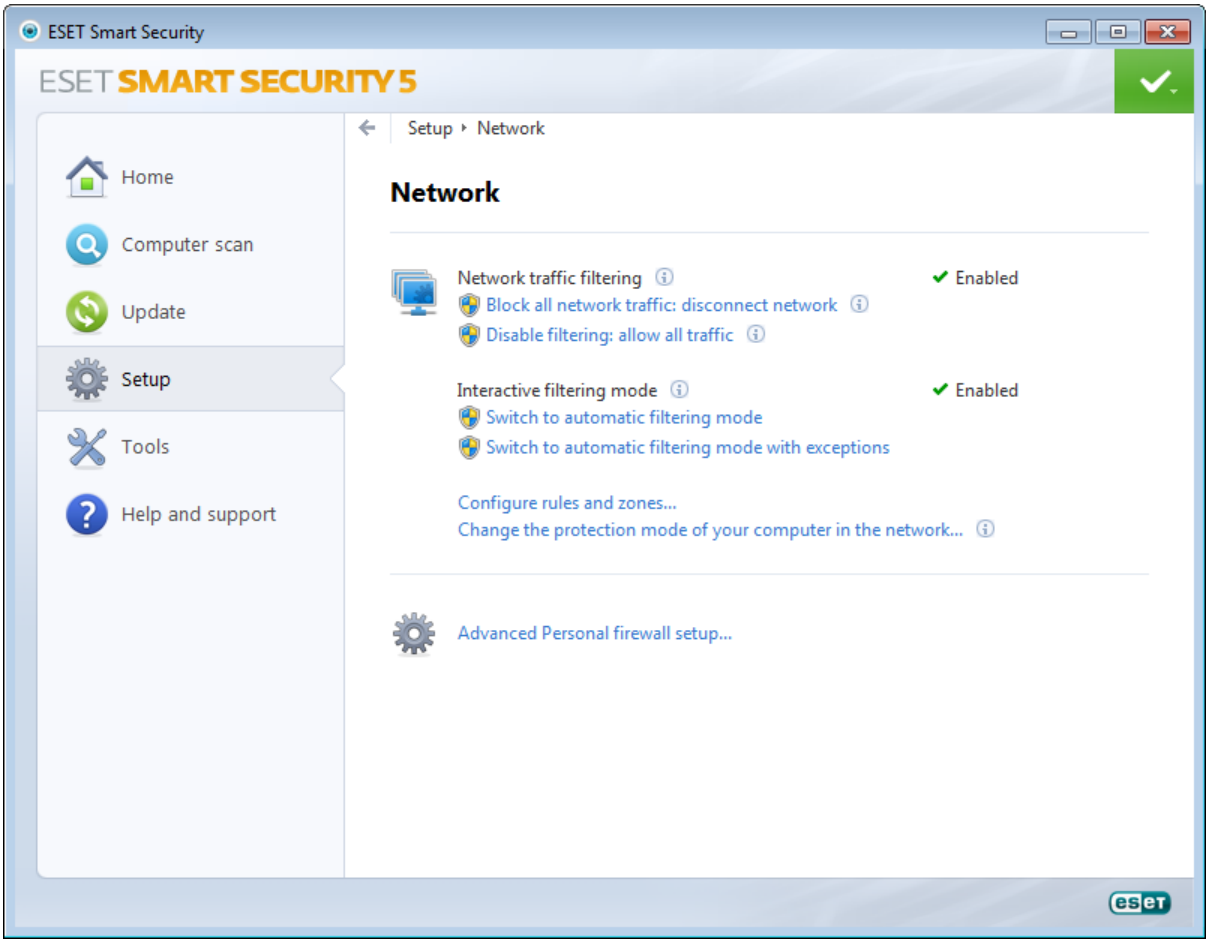
The dialog window allows you to create a rule based on any new action that HIPS detects and then define the conditions under which to allow or deny that action. Settings for the exact parameters can be accessed by clicking on **Show Options**. Rules created like this are considered equal to rules created manually, so a rule created from a dialog window can be less specific than the rule that triggered that dialog window. This means that after creating such a rule, the same operation can trigger the same window.

The **Temporarily remember this action for this process** option causes the action (**Allow** / **Deny**) to be used until a change of rules or filtering mode, a HIPS module update or a system restart. After any of these three actions, temporary rules will be deleted.

4.2 Network

The Personal firewall controls all network traffic to and from the system. This is accomplished by allowing or denying individual network connections based on specified filtering rules. It provides protection against attacks from remote computers and enables blocking of some services. It also provides antivirus protection for HTTP, POP3 and IMAP protocols. This functionality represents a very important element of computer security.

Personal firewall configuration can be found in the **Setup** pane after clicking on the **Network** title. Here, you can adjust the filtering mode, rules and detailed settings. You can also access more detailed settings of the program from here.



The only option for blocking all network traffic is to click **Block all network traffic: disconnect network**. All inbound and outbound communication will be blocked by the Personal firewall. Use this option only if you suspect critical security risks requiring the system to be disconnected from the network.

The **Disable filtering: allow all traffic** option is the opposite of blocking all network traffic. If selected, all Personal firewall filtering options are turned off and all incoming and outgoing connections are permitted. It has the same effect as no firewall being present. While Network traffic filtering is in **Blocking** state, the **Switch to filtering mode** option enables the firewall.

The following options are available when Automatic filtering mode is enabled:

- **Automatic filtering mode** – To change the filtering mode, click the **Switch to interactive filtering mode** option.
- **Zone setup...** – Displays the trusted zone setup options.

The following options are available when Interactive filtering mode is enabled:

- **Interactive filtering mode** – To change the filtering mode, click either **Switch to automatic filtering mode** or **Switch to automatic filtering mode with exceptions** depending on the current filtering mode.
- **Configure rules and zones...** – Opens the **Zone and rule setup** window, which allows you to define how the firewall will handle network communication.

Change the protection mode of your computer in the network... – This allows you to choose between strict or allowed protection mode.

Advanced Personal firewall setup... – Allows you to access the advanced firewall setup options.

4.2.1 Filtering modes

Five filtering modes are available for the ESET Smart Security Personal firewall. Filtering modes can be found in **Advanced setup** (F5) by clicking **Network** > **Personal firewall**. The behavior of the firewall changes based on the selected mode. Filtering modes also influence the level of user interaction required.

Filtering can be performed in one of five modes:

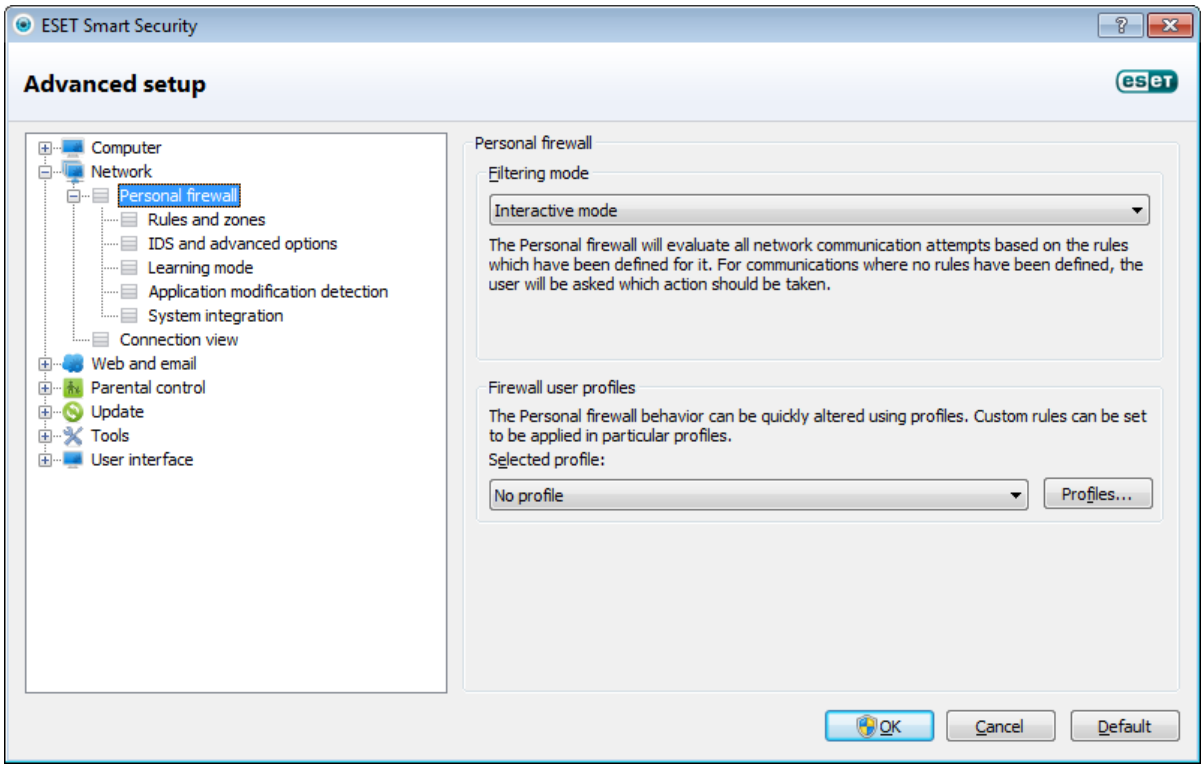
Automatic mode – The default mode. This mode is suitable for users who prefer easy and convenient use of the firewall with no need to define rules. Automatic mode allows all outbound traffic for the given system and blocks all new connections initiated from the network side.

Automatic mode with exceptions (user-defined rules) – In addition to automatic mode, you can also add custom, user-defined rules.

Interactive mode – Allows you to build a custom configuration for your Personal firewall. When a communication is detected and no existing rules apply to that communication, a dialog window reporting an unknown connection will be displayed. The dialog window gives the option of allowing or denying the communication, and the decision to allow or deny can be remembered as a new rule for the Personal firewall. If you choose to create a new rule at this time, all future connections of this type will be allowed or blocked according to the rule.

Policy-based mode – Blocks all connections which are not defined by a specific rule that allows them. This mode allows advanced users to define rules that permit only desired and secure connections. All other unspecified connections will be blocked by the Personal firewall.

Learning mode – Automatically creates and saves rules; this mode is suitable for initial configuration of the Personal firewall. No user interaction is required, because ESET Smart Security saves rules according to predefined parameters. Learning mode is not secure, and should only be used until all rules for required communications have been created.

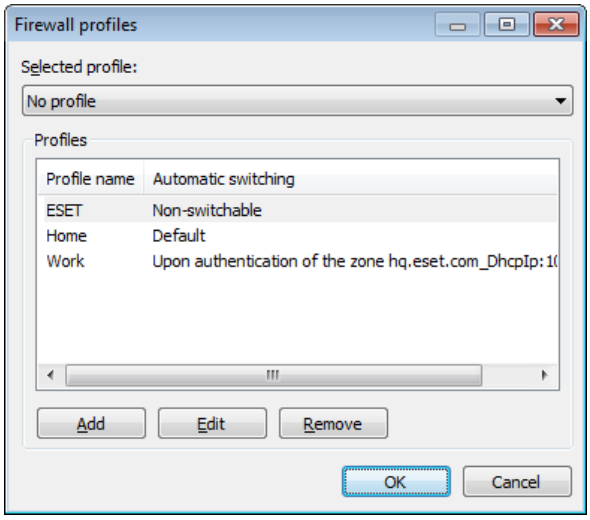


Profiles are a tool to control the behavior of the ESET Smart Security Personal firewall.

4.2.2 Firewall profiles

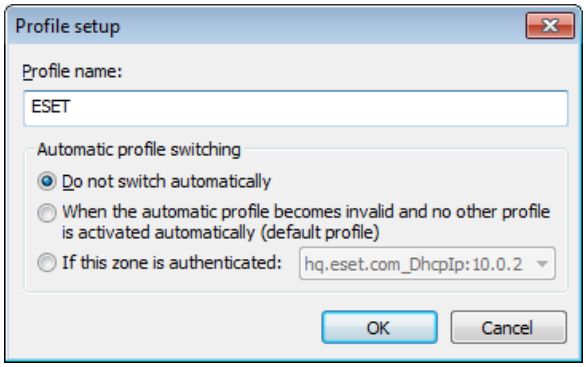
Profiles can be used to control the behavior of the ESET Smart Security Personal firewall.. When creating or editing a Personal firewall rule, you can assign it to a specific profile or have it apply to every profile. When you select a profile, only the global rules (rules with no profile specified) and the rules that have been assigned to that profile are applied. You can create multiple profiles with different rules assigned to easily alter the Personal firewall behavior.

Click the **Profiles...** button (see figure in section Filtering modes) to open the **Firewall profiles** window where you can **Add**, **Edit** or **Remove** profiles. Note that in order to **Edit** or **Remove** a profile, it must not be selected from the **Selected profile** drop-down menu. When adding or editing a profile, you can also define the conditions that trigger it.



When creating a profile, you can select events that will trigger the profile. The following options are available:

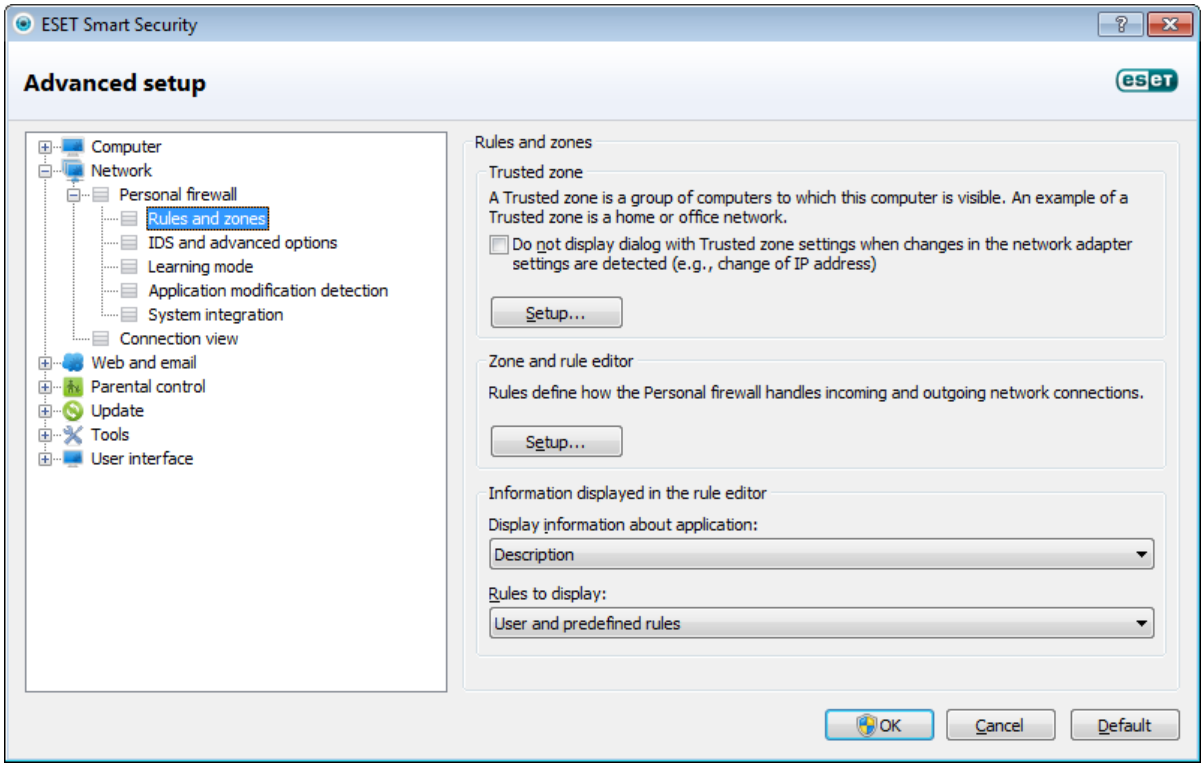
- **Do not switch automatically** – The automatic trigger is turned off (the profile must be activated manually).
- **When the automatic profile becomes invalid and no other profile is activated automatically (default profile)** – When the automatic profile becomes invalid (ie. if the computer is connected to an untrusted network – see section Network authentication) and another profile is not activated in its place (the computer is not connected to another trusted network), the Personal firewall will switch to this profile. Only one profile can use this trigger.
- **If this zone is authenticated** – This profile will be triggered when the specified zone is authenticated (see section Network authentication).



When the Personal firewall switches to another profile, a notification will appear in the lower right corner by the system clock.

4.2.3 Configuring and using rules

Rules represent a set of conditions used to meaningfully test all network connections and all actions assigned to these conditions. With the Personal firewall, you can define what action to take if a connection defined by a rule is established. To access the rule filtering setup, navigate to **Advanced setup** (F5) > **Network** > **Personal firewall** > **Rules and zones**.



Click the **Setup...** button in the **Trusted zone** section to display the Trusted zone setup window. The **Do not display with Trusted zone settings...** option allows the user to disable the trusted zone setup window each time the presence of a new subnet is detected. The currently specified zone configuration is automatically used.

NOTE: If the Personal firewall is set to **Automatic mode**, some settings are not available.

Click the Setup... button in the **Zone and rule editor** section to display the **Zone and rule setup** window, where an overview of either rules or zones is displayed (based on the currently selected tab). The window is divided into two sections. The upper section lists all rules in a shortened view. The lower section displays details about the rule currently selected in the upper section. The bottom of the window has **New**, **Edit**, and **Delete (Del)** buttons, which allow you to configure rules.

Connections can be divided into incoming and outgoing connections. Incoming connections are initiated by a remote computer attempting to establish a connection with the local system. Outgoing connections work in the opposite way – the local system contacts a remote computer.

If a new unknown communication is detected, you must carefully consider whether to allow or deny it. Unsolicited, unsecured or unknown connections pose a security risk to the system. If such a connection is established, we recommend that you pay particular attention to the remote computer and the application attempting to connect to your computer. Many infiltrations try to obtain and send private data, or download other malicious applications to host workstations. The Personal firewall allows you to detect and terminate such connections.

Display information about application allows you to define how applications will be displayed in the list of rules. The following options are available:

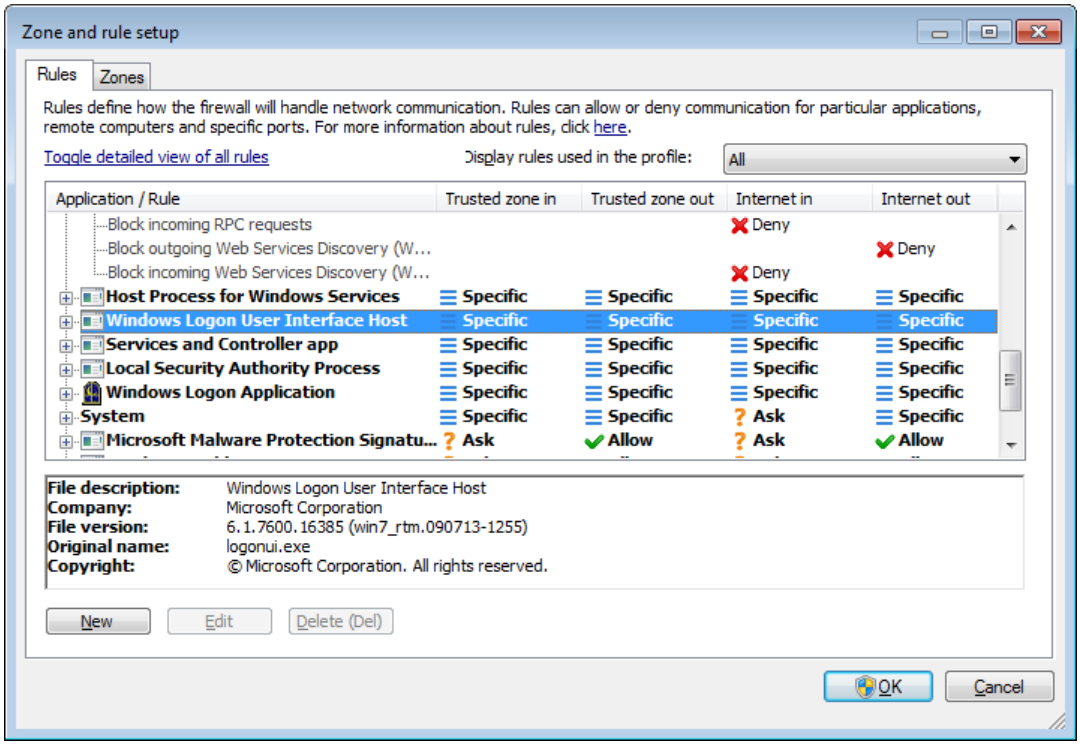
- **Full path** – Full path to the application's executable.
- **Description** – Description of the application.
- **Name** – Name of the application's executable.

Select what type of rules will be displayed in the **Rules to display** list:

- **Only user defined rules** – Displays only those rules created by the user.
- **User and pre-defined rules** – Displays all user-defined and default pre-defined rules.
- **All rules (including system)** – All rules are displayed.

4.2.3.1 Rules setup

Rules setup allows you to view all rules applied on the traffic generated by individual applications within trusted zones and the Internet. By default, rules are added automatically according to user reactions to a new communication. To view more information about an application at the bottom of this window, click the name of the application.



At the beginning of each line corresponding to a rule, there is a button allowing you to expand/collapse (+/-) the information. Click on the name of the application in the **Application / Rule** column to display information about the rule at the bottom of this window. You can use the contextual menu to change the display mode. The contextual menu can be also used for adding, editing and deleting rules.

Trusted zone in/out – Actions related to incoming or outgoing communication within the Trusted zone.

Internet in/out – Internet connection related actions to incoming or outgoing communication.

For each type (direction) of communication, you can select the following actions:

- **Allow** – To allow communication.
- **Ask** – You will be prompted to allow or deny each time communication is established.
- **Deny** – To deny communication.
- **Specific** – Cannot be classified with respect to the other actions. For example, if an IP address or port are allowed through the Personal firewall, it cannot be classified with certainty, whether incoming or outgoing communications of a related application are allowed.

When installing a new application which accesses the network or when modifying an existing connection (remote side, port number, etc.), a new rule must be created. To edit an existing rule, verify that the **Rules** tab is selected and click the **Edit** button.

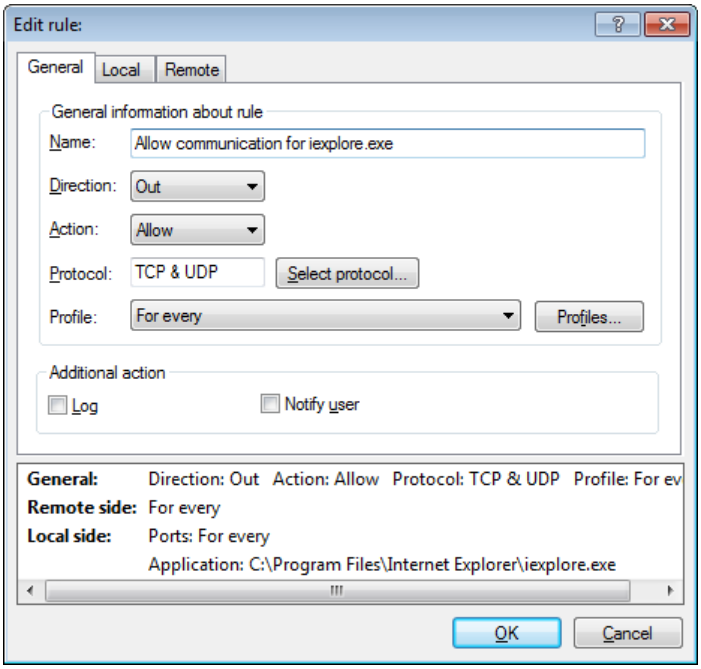
4.2.3.2 Editing rules

Modification is required each time any of the monitored parameters are changed. In this case, the rule cannot fulfill the conditions and the specified action cannot be applied. If parameters have changed, the given connection may be refused, which can result in problems with operation of the application in question. An example is a change of network address or port number for the remote side.

The upper part of the window contains three tabs:

- **General** – Specify a rule name, the direction of the connection, the action, the protocol and the profile to which the rule will apply.
- **Local** – Displays information about the local side of the connection, including the number of the local port or port range and the name of the communicating application.
- **Remote** – This tab contains information about the remote port (port range). It also allows you to define a list of

remote IP addresses or zones for a given rule.



Protocol represents the transfer protocol used for the rule. Click **Select protocol...** to open the Protocol selection window.

All rules are enabled **For every** profile by default. Alternatively, select a custom firewall profile using the **Profiles...** button.

If you click **Log**, the activity connected with the rule will be recorded in a log. **Notify user** option displays a notification when the rule is applied.

The Information box displays a summary of the rule at the bottom of all three tabs. You will see the same information if you click the rule in the main window (**Tools** > **Network connections**; right-click the rule and enable the **Show details** option (see chapter Network connections)).

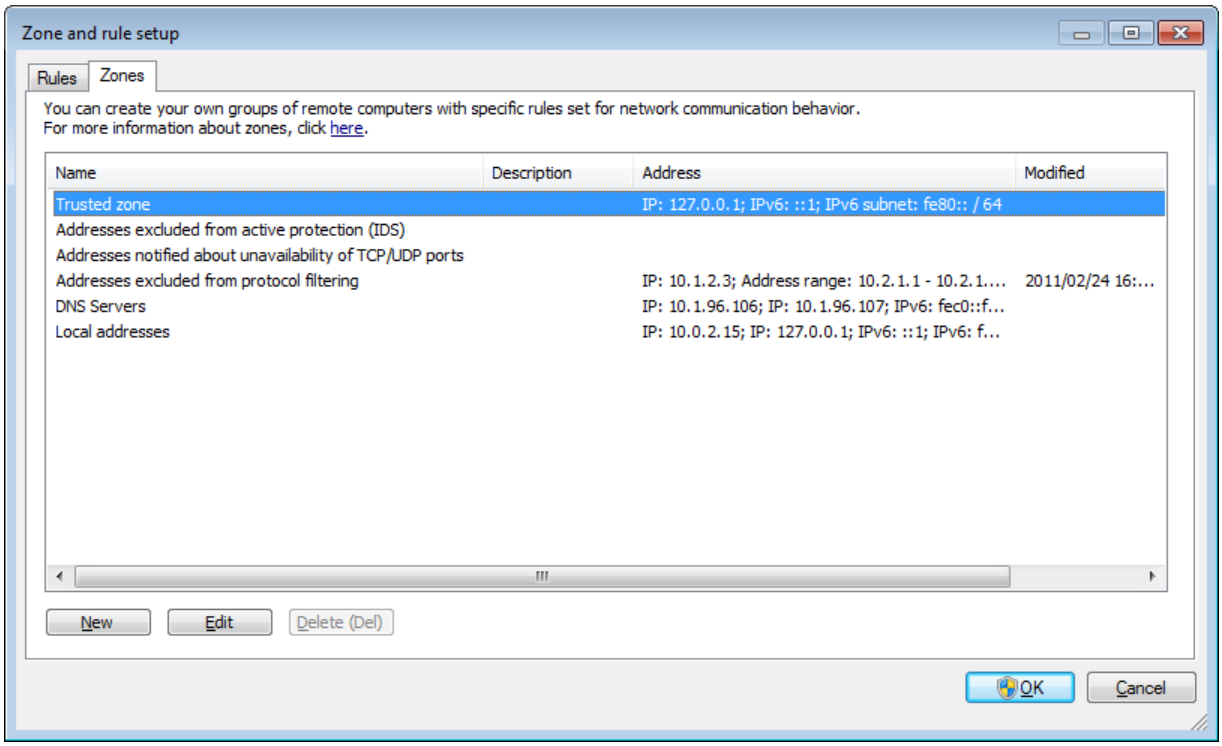
When creating a new rule, you have to enter a name for the rule into the **Name** field. Select the direction to which the rule applies from the **Direction** drop-down menu. Set the action to be executed when a communication meets the rule from the **Action** drop-down menu.

A good example of adding a new rule is allowing your Internet browser to access the network. The following must be provided in this case:

- In the **General** tab, enable outgoing communication via the TCP and UDP protocol.
- Add the process representing your browser application (for Internet Explorer it is iexplore.exe) in the **Local** tab.
- In the **Remote** tab, enable port number 80 only if you wish to allow standard Internet browsing activities.

4.2.4 Configuring zones

In the **Zone setup** window you can specify the zone name, description, network address list and zone authentication (see Zone authentication – Client configuration).


Zone and rule setup
Rules
Zones
You can create your own groups of remote computers with specific rules set for network communication behavior.
For more information about zones, click here.
Name
Description
Address
Modified
Trusted zone
IP: 127.0.0.1; IPv6: ::1; IPv6 subnet: fe80:: / 64
Addresses excluded from active protection (IDS)
Addresses notified about unavailability of TCP/UDP ports
Addresses excluded from protocol filtering
IP: 10.1.2.3; Address range: 10.2.1.1 - 10.2.1.... 2011/02/24 16:...
DNS Servers
IP: 10.1.96.106; IP: 10.1.96.107; IPv6: fec0::f...
Local addresses
IP: 10.0.2.15; IP: 127.0.0.1; IPv6: ::1; IPv6: f...
New
Edit
Delete (Del)
OK
Cancel

A zone represents a collection of network addresses which create one logical group. Each address in a given group is assigned similar rules defined centrally for the whole group. One example of such a group is the **Trusted zone**. The Trusted zone represents a group of network addresses which are fully trusted and not blocked by the Personal firewall in any way.

These zones can be configured using the **Zones** tab in the **Zone and rule setup** window, by clicking the **Edit** button. Enter a **Name** for the zone, a **Description**, and add a remote IP address by clicking the **Add IPv4/IPv6 address** button.

4.2.4.1 Network authentication

For mobile computers, it is recommended that you verify the network credibility of the network that you are connecting to. The Trusted zone is identified by the local IP address of the network adapter. Mobile computers often enter networks with IP addresses that are similar to the trusted network. If the Trusted zone settings are not manually switched to **Strict protection**, the Personal firewall will continue to use the **Allow sharing** mode.

To prevent this type of situation, we recommended using zone authentication.

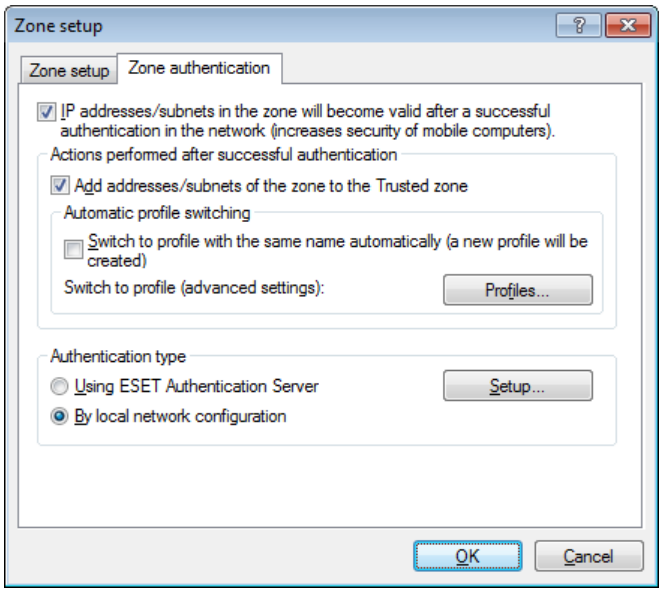
4.2.4.1.1 Zone authentication - Client configuration

In the **Zone and rule setup** window, click the **Zones** tab and create a new zone using the name of the zone authenticated by the server. Then click **Add IPv4 address** and select the **Subnet** option to add a subnet mask that contains the authentication server.

Click the **Zone authentication** tab. Each zone can be set to authenticate to the server. The zone (its IP address and subnet) will be valid after it is successfully authenticated – e.g. actions such as switching to a firewall profile and adding an address/subnet of the zone to the Trusted Zone will be performed only after successful authentication.

Select the **IP addresses/subnets in the zone will become valid...** option to make a zone that will become invalid if authentication is unsuccessful. To select a Personal firewall profile to be activated after a successful zone authentication, click the **Profiles...** button.

If you select the **Add addresses/subnets of the zone to the Trusted Zone** option, the addresses/subnets of the zone will be added to the Trusted zone after successful authentication (recommended). If the authentication is unsuccessful, the addresses will not be added to the Trusted zone. If the **Switch to profile with the same name automatically (a new profile will be created)** option is active, a new profile will be created after successful authentication. Click the **Profiles...** button to open the Firewall profiles window.


Zone setup
Zone setup
Zone authentication
IP addresses/subnets in the zone will become valid after a successful authentication in the network (increases security of mobile computers).
Actions performed after successful authentication
Add addresses/subnets of the zone to the Trusted zone
Automatic profile switching
Switch to profile with the same name automatically (a new profile will be created)
Switch to profile (advanced settings):
Profiles...
Authentication type
Using ESET Authentication Server
Setup...
By local network configuration
OK
Cancel

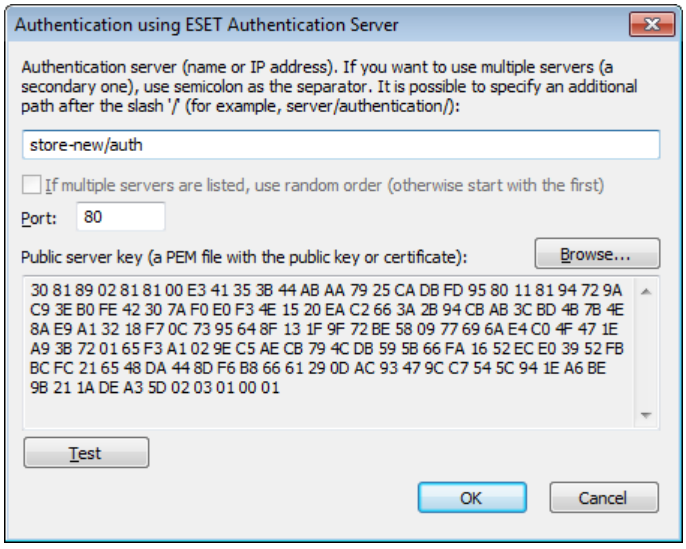
There are two authentication types available:

1) Using ESET authentication server

Zone authentication searches for a specific server in the network and uses asymmetric encryption (RSA) to authenticate the server. The authentication process is repeated for each network your computer connects to. Click **Setup...** and specify a server name, server listening port and a public key that corresponds to the private server key (see section Zone authentication – Server configuration). The server name can be entered in the form of an IP address, DNS or NetBios name. The server name can be followed by a path specifying the location of the key on the server (e.g., *server_name_/directory1/directory2/authentication*). Enter multiple servers, separated by semicolons, to serve as alternate servers if the first one is unavailable.

The public key can be a file of one of the following types:

- PEM encrypted public key (.pem)
  This key can be generated using the ESET Authentication Server (see section Zone authentication – Server configuration).
- Encrypted public key
- Public key certificate (.crt)


Authentication using ESET Authentication Server
Authentication server (name or IP address). If you want to use multiple servers (a secondary one), use semicolon as the separator. It is possible to specify an additional path after the slash '/' (for example, server/authentication/):
store-new/auth
If multiple servers are listed, use random order (otherwise start with the first)
Port:
80
Public server key (a PEM file with the public key or certificate):
Browse...
30 81 89 02 81 81 00 E3 41 35 3B 44 AB AA 79 25 CA DB FD 95 80 11 81 94 72 9A
C9 3E B0 FE 42 30 7A F0 E0 F3 4E 15 20 EA C2 66 3A 2B 94 CB AB 3C BD 4B 7B 4E
8A E9 A1 32 18 F7 0C 73 95 64 8F 13 1F 9F 72 BE 58 09 77 69 6A E4 C0 4F 47 1E
A9 3B 72 01 65 F3 A1 02 9E C5 AE CB 79 4C DB 59 5B 66 FA 16 52 EC E0 39 52 FB
BC FC 21 65 48 DA 44 8D F6 B8 66 61 29 0D AC 93 47 9C C7 54 5C 94 1E A6 BE
9B 21 1A DE A3 5D 02 03 01 00 01
Test
OK
Cancel

To test your settings, click the **Test** button. If authentication is successful, a *Server authentication successful* message will appear. If authentication is not configured properly, one of the following error messages will appear:

Server authentication failed. Maximum time for authentication elapsed.
The authentication server is inaccessible. Check the server name/IP address and/or verify the Personal firewall settings of the client as well as the server section.

An error has occurred while communicating with the server.
The authentication server is not running. Start the authentication server service (see section Zone authentication –

Server configuration).

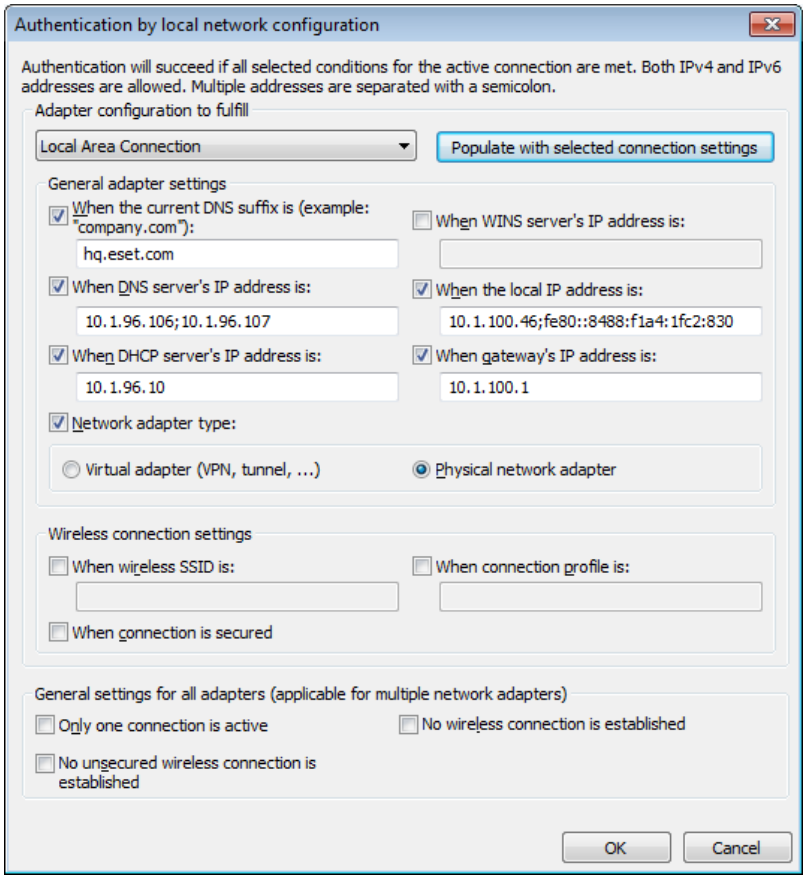
The name of the authentication zone does not match the server zone.
The configured zone name does not correspond with the authentication server zone. Review both zones and ensure their names are identical.

Server authentication failed. Server address not found in the list of addresses for the given zone.
The IP address of the computer running the authentication server is outside the defined IP address range of the current zone configuration.

Server authentication failed. Probably an invalid public key was entered.
Verify that the public key specified corresponds to the private server key. Also verify that the public key file is not corrupted.

2) By local network configuration

Authentication is performed based on the local network adapter parameters. A zone is authenticated if all selected parameters for the active connection are valid.


Authentication by local network configuration
Authentication will succeed if all selected conditions for the active connection are met. Both IPv4 and IPv6 addresses are allowed. Multiple addresses are separated with a semicolon.
Adapter configuration to fulfill
Local Area Connection
Populate with selected connection settings
General adapter settings
When the current DNS suffix is (example: "company.com"):
hq.eset.com
When WINS server's IP address is:
When DNS server's IP address is:
10.1.96.106;10.1.96.107
When the local IP address is:
10.1.100.46;fe80::8488:f1a4:1fc2:830
When DHCP server's IP address is:
10.1.96.10
When gateway's IP address is:
10.1.100.1
Network adapter type:
Virtual adapter (VPN, tunnel, ...)
Physical network adapter
Wireless connection settings
When wireless SSID is:
When connection profile is:
When connection is secured
General settings for all adapters (applicable for multiple network adapters)
Only one connection is active
No wireless connection is established
No unsecured wireless connection is established
OK
Cancel

4.2.4.1.2 Zone authentication - Server configuration

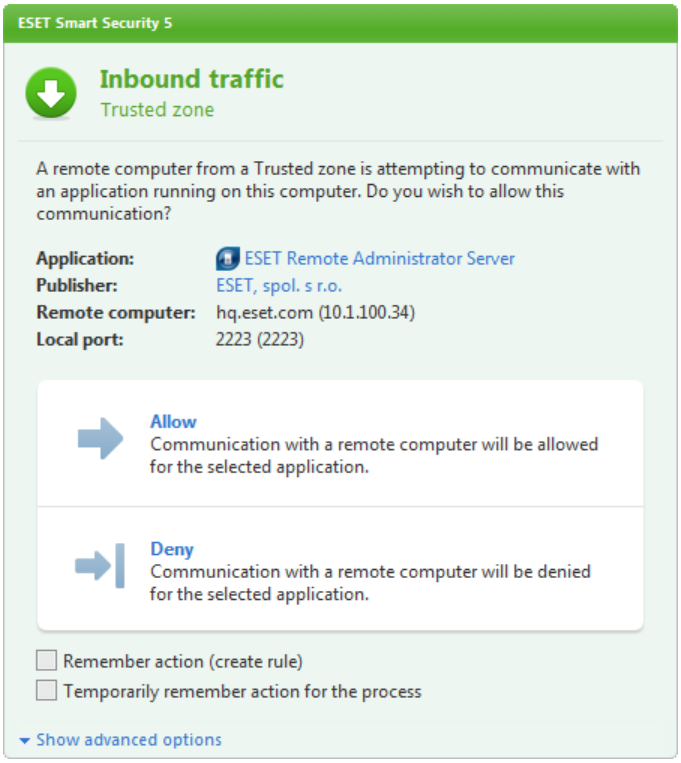
The authentication process can be executed by any computer/server connected to the network that is to be authenticated. The ESET Authentication Server application needs to be installed on a computer/server that is always accessible for authentication whenever a client attempts to connect to the network. The installation file for the ESET Authentication Server application is available for download on ESET's website.

After you install the ESET Authentication Server application, a dialog window will appear (you can access the application by clicking **Start** > **Programs** > **ESET** > **ESET Authentication Server**).

To configure the authentication server, enter the authentication zone name, the server listening port (default is 80) as well as the location to store the public and private key pair. Next, generate the public and private key that will be used in the authentication process. The private key will remain on the server while the public key needs to be imported on the client side in the Zone authentication section when setting up a zone in the firewall setup.

4.2.5 Establishing connection - detection

The Personal firewall detects each newly-created network connection. The active firewall mode determines which actions are performed for the new rule. If **Automatic mode** or **Policy-based mode** is activated, the Personal firewall will perform predefined actions with no user interaction. Interactive mode displays an informational window which reports detection of a new network connection, supplemented with detailed information about the connection. You can opt to allow the connection or refuse (block) it. If you repeatedly allow the same connection in the dialog window, we recommend that you create a new rule for the connection. To do this, select the **Remember action (create rule)** option and save the action as a new rule for the Personal firewall. If the firewall recognizes the same connection in the future, it will apply the existing rule without requiring user interaction.


ESET Smart Security 5
Inbound traffic
Trusted zone
A remote computer from a Trusted zone is attempting to communicate with an application running on this computer. Do you wish to allow this communication?
Application: ESET Remote Administrator Server
Publisher: ESET, spol. s r.o.
Remote computer: hq.eset.com (10.1.100.34)
Local port: 2223 (2223)
Allow
Communication with a remote computer will be allowed for the selected application.
Deny
Communication with a remote computer will be denied for the selected application.
Remember action (create rule)
Temporarily remember action for the process
Show advanced options

Please be careful when creating new rules and only allow connections which are secure. If all connections are allowed, then the Personal firewall fails to accomplish its purpose. These are the important parameters for connections:

- **Remote side** – Only allow connections to trusted and known addresses.
- **Local application** – It is not advisable to allow connections for unknown applications and processes.
- **Port number** – Communication on common ports (e.g., web traffic – port number 80) should be allowed under normal circumstances.

In order to proliferate, computer infiltrations often use the Internet and hidden connections to help them infect remote systems. If rules are correctly configured, a Personal firewall becomes a useful tool for protection against a variety of malicious code attacks.

4.2.6 Logging

The ESET Smart Security Personal firewall saves all important events in a log file, which can be viewed directly from the main menu. Click **Tools** > **Log files** and then select **ESET Personal firewall log** from the **Log** drop-down menu.

The log files are a valuable tool for detecting errors and revealing intrusions into your system. ESET Personal firewall logs contain the following data:

- Date and time of event
- Name of event
- Source
- Target network address
- Network communication protocol
- Rule applied, or name of worm, if identified
- Application involved
- User

A thorough analysis of this data can help detect attempts to compromise system security. Many other factors indicate potential security risks and allow you to minimize their impact: too frequent connections from unknown locations, multiple attempts to establish connections, unknown applications communicating or unusual port numbers used.

4.2.7 System integration

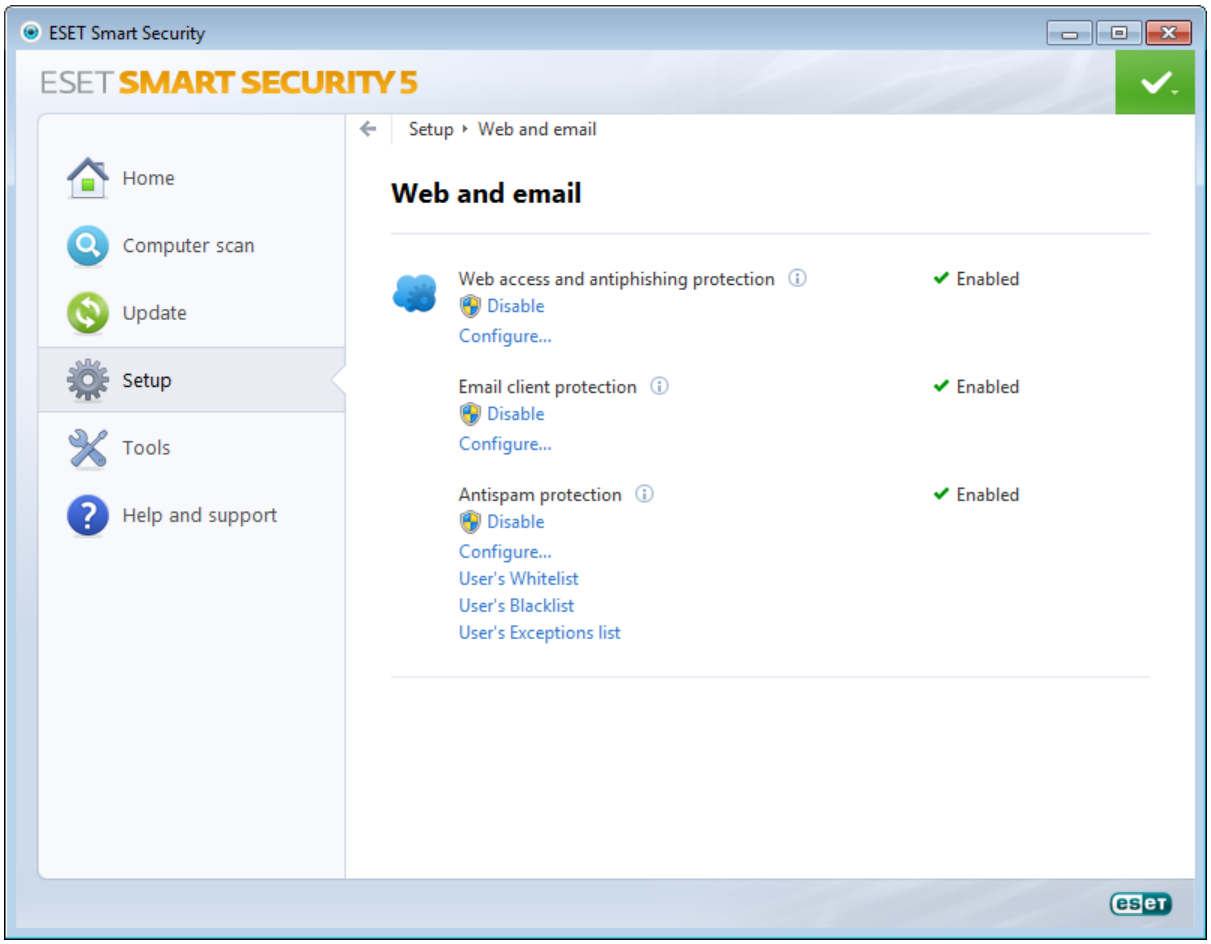
The ESET Smart Security Personal firewall can operate at several levels:

- **All features active** – The Personal firewall is fully integrated and its components are active (default option). In case the computer is connected to a larger network or the internet, it is advisable to leave this option activated. This is the most secure option and fully protects your system.
- **Personal firewall is inactive** – The Personal firewall is integrated in the system and mediates network communication but does not check for threats.
- **Only scan application protocols** – Only components of the Personal firewall that provide scanning of application protocols (HTTP, POP3, IMAP and their secured versions) are active. If the application protocols are not scanned, protection is carried out at the level of real-time file system protection and on-demand computer scan.
- **Personal firewall is completely disabled** – Select this option to completely unregister the Personal firewall from the system. No scanning is performed. This can be useful when testing – if an application is blocked, you can check if it is blocked by the firewall. This is the least secure option, so we recommend being cautious when disabling the firewall completely.

Postpone Personal firewall module update until a computer restart – The update will only be downloaded, installation will be performed during a computer restart.

4.3 Web and email

Web and email configuration can be found in the **Setup** pane after clicking on the **Web and email** title. From here you can access more detailed settings of the program.



Internet connectivity is a standard feature for personal computers. Unfortunately, it has also become the main medium for transferring malicious code. Because of this, it is essential that you carefully consider your **Web access and antiphishing protection**.

Email client protection provides control of email communication received through the POP3 and IMAP protocol.

Using the plug-in program for your email client, ESET Smart Security provides control of all communications from the email client (POP3, MAPI, IMAP, HTTP).

The **Antispam protection** filters unsolicited email messages.

Disable – Deactivates web/email/antispam protection for email clients.

Configure ... – Opens web/email/antispam protection advanced settings.

User's Whitelist – Opens a dialog window where you can add, edit or delete email addresses that are considered safe. Email messages with the sender address listed in the Whitelist will not be scanned for spam.

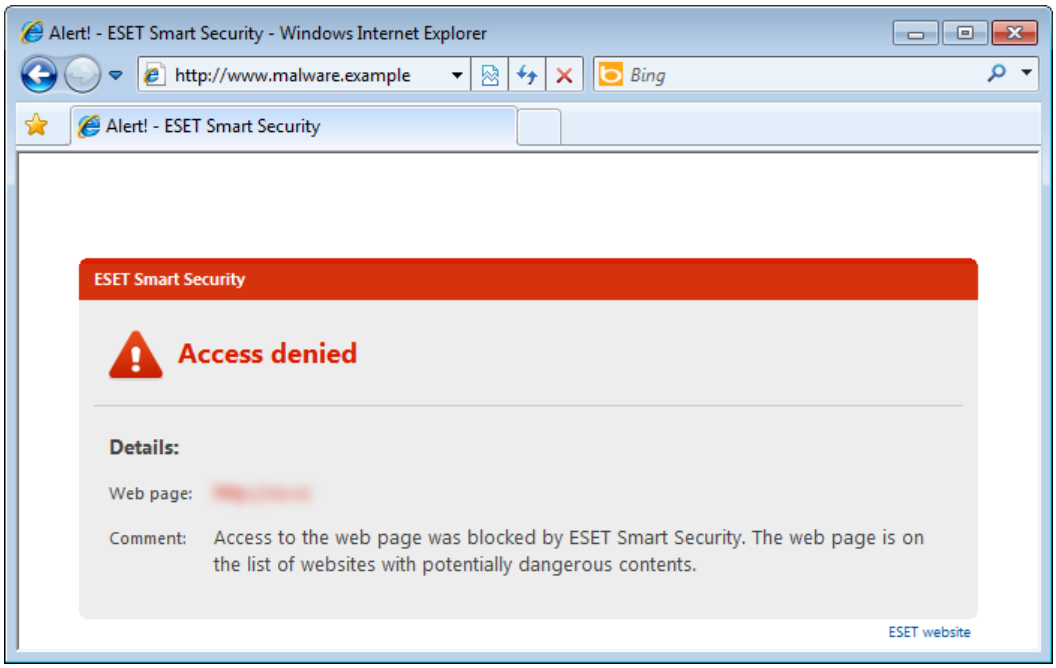
User's Blacklist – Opens a dialog window where you can add, edit or delete email addresses that are considered unsafe. Email messages with the sender address listed in the Blacklist will be assessed as spam.

User's Exceptions list – Opens a dialog window where you can add, edit or delete email addresses that may be spoofed and used for sending spam. Email messages with the sender address listed in the Exception list will always be scanned for spam. By default, the Exception list contains your email addresses from existing email client accounts.

4.3.1 Web access and antiphishing protection

Internet connectivity is a standard feature in a personal computer. Unfortunately, it has also become the main medium for transferring malicious code. Web access and antiphishing protection works by monitoring communication between web browsers and remote servers, and complies with HTTP (Hypertext Transfer Protocol) and HTTPS (encrypted communication) rules.

The term phishing defines a criminal activity which uses techniques of social engineering (manipulating users in order to obtain confidential information). Read more about this activity in the glossary. ESET Smart Security supports anti-phishing protection – known web pages with such content are always blocked.


Alert! - ESET Smart Security - Windows Internet Explorer
http://www.malware.example
Bing
Alert! - ESET Smart Security
ESET Smart Security
Access denied
Details:
Web page:
Comment:
Access to the web page was blocked by ESET Smart Security. The web page is on the list of websites with potentially dangerous contents.
ESET website

We strongly recommend that Web access and antiphishing protection is enabled. This option can be accessed from the main window of ESET Smart Security by navigating to **Setup** > **Web and email** > **Web access and antiphishing protection**.

4.3.1.1 HTTP, HTTPs

By default, ESET Smart Security is configured to use the standards of most Internet browsers. However, the HTTP scanner setup options can be modified in **Advanced setup** (F5) > **Web and email** > **Web access and antiphishing protection** > **HTTP, HTTPS**. In the main **HTTP/HTTPS scanner** window, you can select or deselect the **Enable HTTP checking** option. You can also define the port numbers used for HTTP communication. By default, the port numbers 80 (HTTP), 8080 and 3128 (for Proxy server) are predefined.

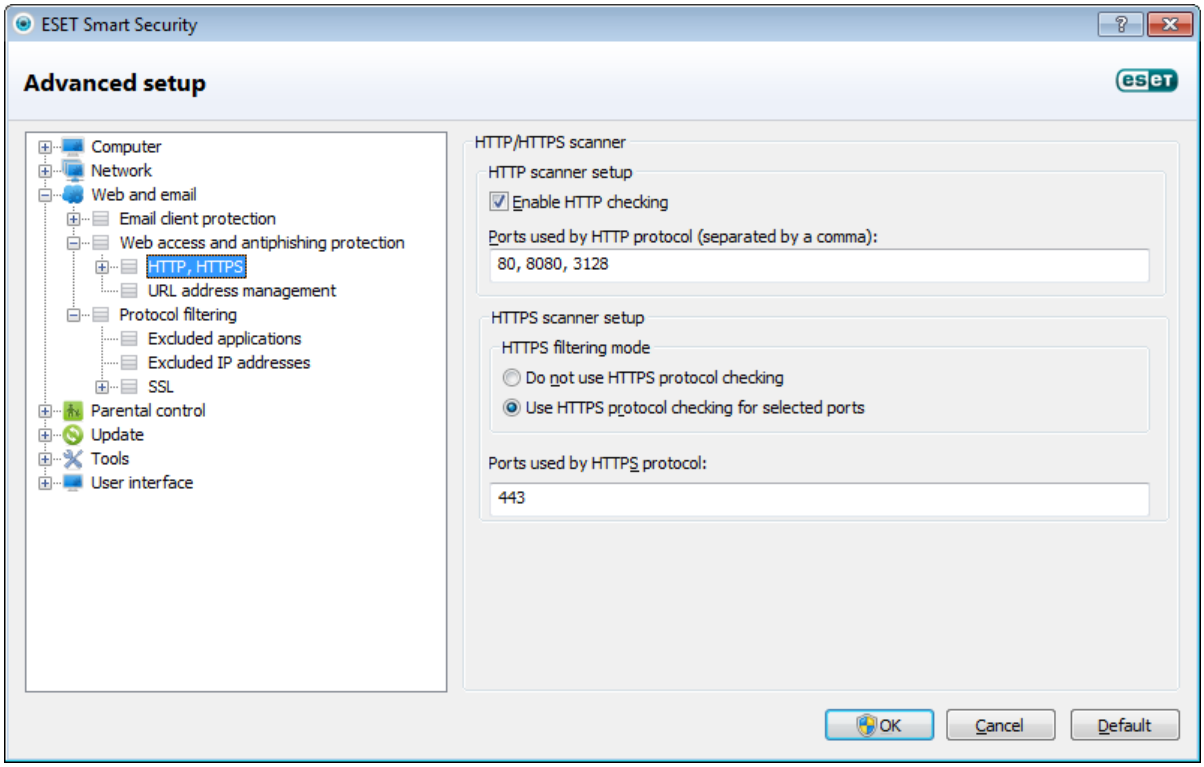
ESET Smart Security supports HTTPS protocol checking. HTTPS communication uses an encrypted channel to transfer information between server and client. ESET Smart Security checks communications utilizing the SSL (Secure Socket Layer), and TLS (Transport Layer Security) encryption methods. HTTPS checking can be performed in the following modes:

Do not use HTTPS protocol checking – Encrypted communication will not be checked.

Use HTTPS protocol checking for selected ports – HTTPS checking only for ports defined in **Ports used by HTTPS protocol**.

Use HTTPS protocol checking for selected ports – The program will only check those applications that are specified in the browsers section and that use ports defined in **Ports used by HTTPS protocol**. Port 443 is set by default.

Encrypted communication will be not scanned. To enable the scanning of encrypted communication and view the scanner setup, navigate to SSL protocol checking in Advanced setup section, click **Web and email** > **Protocol filtering** > **SSL** and enable the **Always scan SSL protocol** option.



4.3.1.1.1 Active mode for web browsers

ESET Smart Security also contains the **Active mode** submenu, which defines the checking mode for web browsers.

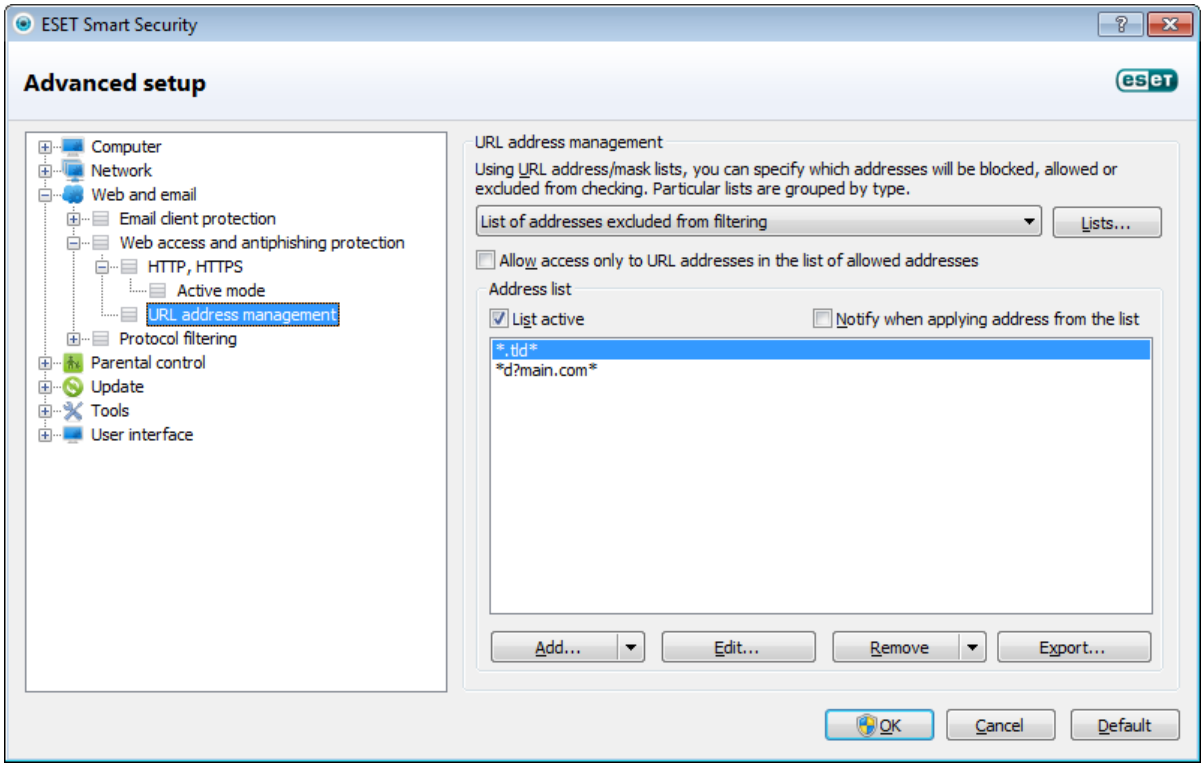
Active mode is useful because it examines transferred data from applications accessing the Internet as a whole, regardless of whether they are marked as web browsers or not (for more information, see Web and email clients). If Active mode is disabled, communication from applications is monitored gradually in batches. This decreases the effectiveness of the data verification process, but also provides higher compatibility for listed applications. If no problems occur while using it, we recommend that you enable active checking mode by selecting the checkbox next to the desired application.This is how Active mode works: When a controlled application downloads data, it is first saved to a temporary file created by ESET Smart Security. Data is not available for the given application at that time. Once downloading is complete, it is checked for malicious code. If no infiltration is found, data is sent to the original application. This process provides complete control of the communications made by a controlled application. If passive mode is activated, data is trickle-fed to the original application to avoid timeouts.

4.3.1.2 URL address management

The URL address management section enables you to specify HTTP addresses to block, allow or exclude from checking. The **Add**, **Edit**, **Remove** and **Export** buttons are used to manage the lists of addresses. Websites in the list of blocked addresses will not be accessible. Websites in the list of excluded addresses are accessed without being scanned for malicious code. If you select the **Allow access only to URL addresses in the list of allowed addresses** option, only addresses present in the list of allowed addresses will be accessible, while all other HTTP addresses will be blocked.

If you add a URL address to the **List of addresses excluded from filtering**, the address will be excluded from scanning. You can also allow or block certain addresses by adding them to the **List of allowed addresses** or **List of blocked addresses**. After you click the **Lists...** button, the **HTTP address/mask lists** window will pop-up where you can **Add** or **Remove** lists of addresses. In order to add an HTTPS URL addresses to the list, the **Always scan SSL protocol** option has to be active.

In all lists, the special symbols * (asterisk) and ? (question mark) can be used. The asterisk substitutes any character string, and the question mark substitutes any symbol. Particular care should be taken when specifying excluded addresses, because the list should only contain trusted and safe addresses. Similarly, it is necessary to ensure that the symbols * and ? are used correctly in this list. To activate a list, select the **List active** option. If you wish to be notified when entering an address from the current list, select **Notify when applying address from the list**.



Add.../From file – Allows you to add an address to the list, either manually (**Add**), or from a simple text file (**From file**). The **From file** option enables you to add multiple URL addresses/masks which are saved in a text file.

Edit... – Manually edit addresses – e.g. by adding a mask ("*" and "?").

Remove/Remove all – Click **Remove** to delete the selected address from the list. To delete all addresses, select **Remove all**.

Export... – Save addresses from the current list to a simple text file.

4.3.2 Email client protection

Email protection provides control of email communication received through the POP3 and IMAP protocols. Using the plug-in for Microsoft Outlook and other e-mail clients, ESET Smart Security provides control of all communications from the email client (POP3, MAPI, IMAP, HTTP). When examining incoming messages, the program uses all the advanced scanning methods provided by the ThreatSense scanning engine. This means that detection of malicious programs takes place even before being matched against the virus signature database. Scanning of POP3 and IMAP protocol communications is independent of the email client used.

The options for this functionality are available through **Advanced setup** > **Web and email** > **Email client protection**.

ThreatSense engine parameter setup – The advanced virus scanner setup enables you to configure scan targets, detection methods, etc. Click **Setup...** to display the detailed virus scanner setup window.

After an email has been checked, a notification with the scan result can be appended to the message. You can select to **Append tag messages to received and read mail**, as well as **Append tag messages to sent mail**. The tag messages cannot be relied on without question, since they may be omitted in problematic HTML messages or can be forged by some viruses. The tag messages can be added to received and read email, to sent email, or both. The available options are:

- **Never** – No tag messages will be added at all.
- **To infected email only** – Only messages containing malicious software will be marked as checked (default).
- **To all scanned email** – The program will append messages to all scanned email.

Append note to the subject of received and read/sent infected email – Enable this checkbox if you want email protection to include a virus warning in the subject of an infected email. This feature allows for simple, subject-based filtering of infected emails (if supported by your email program). It also increases the level of credibility for the recipient and, if an infiltration is detected, provides valuable information about the threat level of a given email or sender.

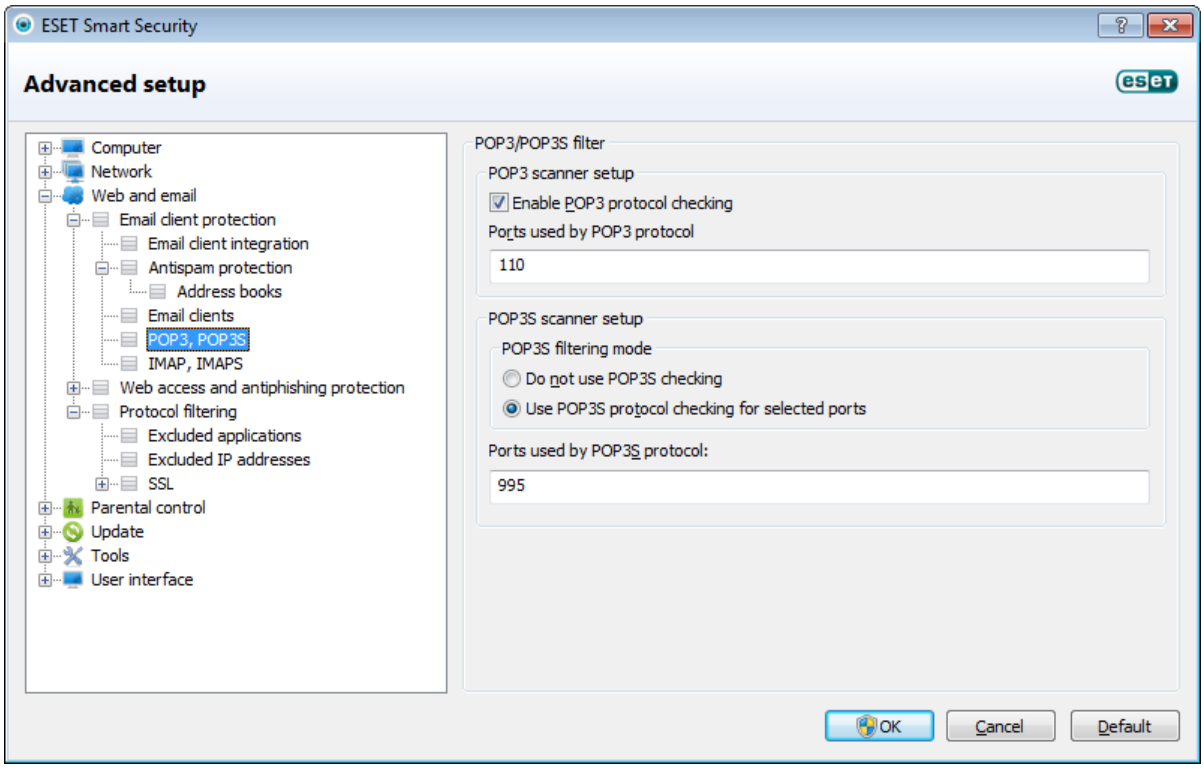
Template added to the subject of infected email – Edit this template if you wish to modify the subject prefix format of an infected email. This function will replace the message subject *"Hello"* with a given prefix value *"[virus]"* to the following format: *"[virus] Hello"*. The variable *%VIRUSNAME%* represents the detected threat.

4.3.2.1 POP3, POP3S filter

The POP3 protocol is the most widespread protocol used to receive email communication in an email client application. ESET Smart Security provides protection for this protocol regardless of the email client used.

The protection module providing this control is automatically initiated at system startup and is then active in memory. For the module to work correctly, please make sure it is enabled – POP3 protocol checking is performed automatically with no need for reconfigure the email client. By default, all communication on port 110 is scanned, but other communication ports can be added if necessary. Multiple port numbers must be delimited by a comma.

Encrypted communication will be not scanned. To enable the scanning of encrypted communication and view the scanner setup, navigate to SSL protocol checking in Advanced setup section, click **Web and email** > **Protocol filtering** > **SSL** and enable the **Always scan SSL protocol** option.



In this section, you can configure POP3 and POP3S protocol checking.

Enable POP3 protocol checking – If enabled, all traffic through POP3 is monitored for malicious software.

Ports used by POP3 protocol – A list of ports used by the POP3 protocol (110 by default).

ESET Smart Security also supports POP3S protocol checking. This type of communication uses an encrypted channel to transfer information between server and client. ESET Smart Security checks communications utilizing the SSL (Secure Socket Layer), and TLS (Transport Layer Security) encryption methods.

Do not use POP3S checking – Encrypted communication will not be checked.

Use POP3S protocol checking for selected ports – Check this option to enable POP3S checking only for ports defined in **Ports used by POP3S protocol**.

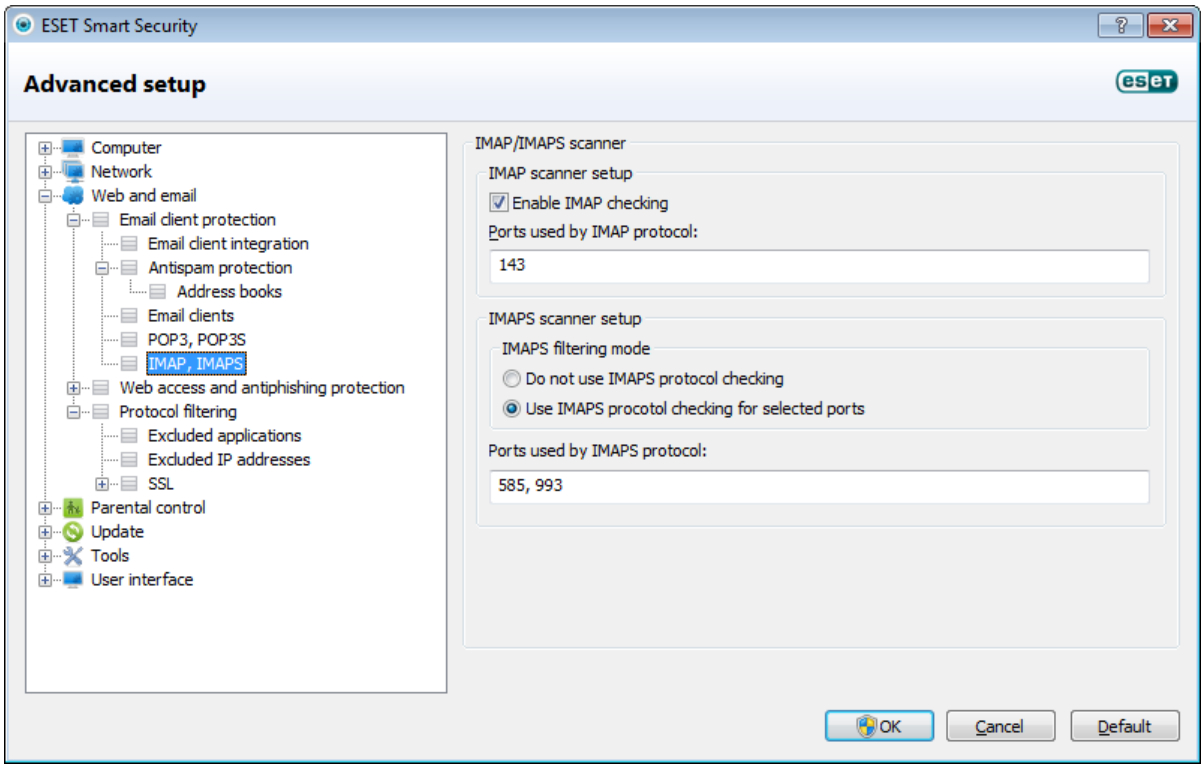
Ports used by POP3S protocol – A list of POP3S ports to check (995 by default).

4.3.2.2 IMAP, IMAPS protocol control

The Internet Message Access Protocol (IMAP) is another Internet protocol for email retrieval. IMAP has some advantages over POP3, e.g., multiple clients can simultaneously connect to the same mailbox and maintain message state information such as whether or not the message has been read, replied to or deleted. ESET Smart Security provides protection for this protocol regardless of the email client used.

The protection module providing this control is automatically initiated at system startup and is then active in memory. For the module to work correctly, please make sure it is enabled; IMAP protocol control is performed automatically with no need for reconfigure the email client. By default, all communication on port 143 is scanned, but other communication ports can be added if necessary. Multiple port numbers must be delimited by a comma.

Encrypted communication will be not scanned. To enable the scanning of encrypted communication and view the scanner setup, navigate to SSL protocol checking in Advanced setup section, click **Web and email** > **Protocol filtering** > **SSL** and enable the **Always scan SSL protocol** option.

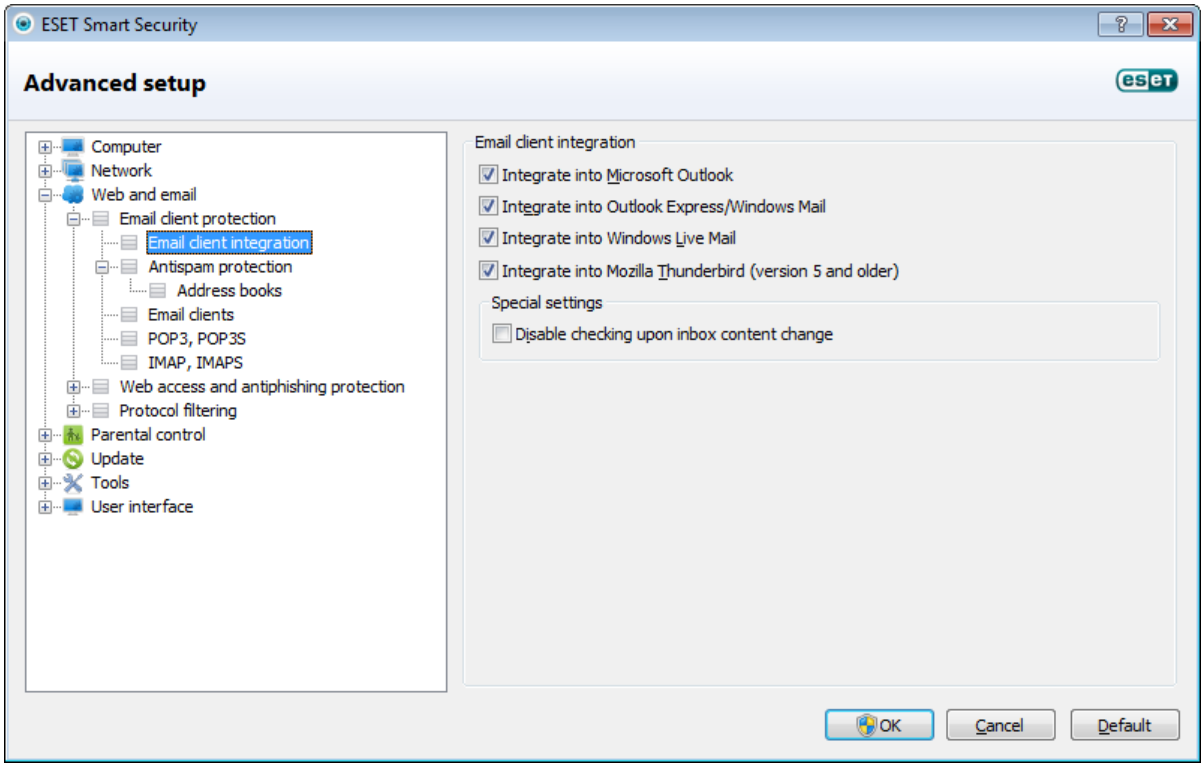


4.3.2.3 Integration with email clients

Integration of ESET Smart Security with email clients increases the level of active protection against malicious code in email messages. If your email client is supported, this integration can be enabled in ESET Smart Security. If integration is activated, the ESET Smart Security toolbar is inserted directly into the email client, allowing for more efficient email protection. The integration settings are available through **Setup** > **Enter advanced setup...** > **Web and email** > **Email client protection** > **Email client integration**.

Email clients that are currently supported include Microsoft Outlook, Outlook Express, Windows Mail, Windows Live Mail and Mozilla Thunderbird. For a complete list of supported email clients and their versions, refer to the following ESET Knowledgebase article.

Select the checkbox next to **Disable checking upon inbox content change** if you are experiencing a system slowdown when working with your email client. Such a situation may take place when downloading email from the Kerio Outlook Connector Store.



Even if integration is not enabled, email communication is still protected by the email client protection module (POP3, IMAP).

4.3.2.3.1 Email client protection configuration

The Email client protection module supports the following email clients: Microsoft Outlook, Outlook Express, Windows Mail, Windows Live Mail and Mozilla Thunderbird. Email protection works as a plug-in for these programs. The main advantage of the plug-in control is that it is independent of the protocol used. When the email client receives an encrypted message, it is decrypted and sent to the virus scanner.

Email to scan

Received email – Toggles checking of received messages.
Sent email – Toggles checking of sent messages.
Read email – Toggles checking of read messages.

Action to be performed on infected email

No action – If enabled, the program will identify infected attachments, but will leave emails without taking any action.
Delete email – The program will notify the user about infiltration(s) and delete the message.
Move email to the Deleted items folder – Infected emails will be moved automatically to the **Deleted items** folder.
Move email to folder – Specify the custom folder you wish to move the infected email to when detected.

Other

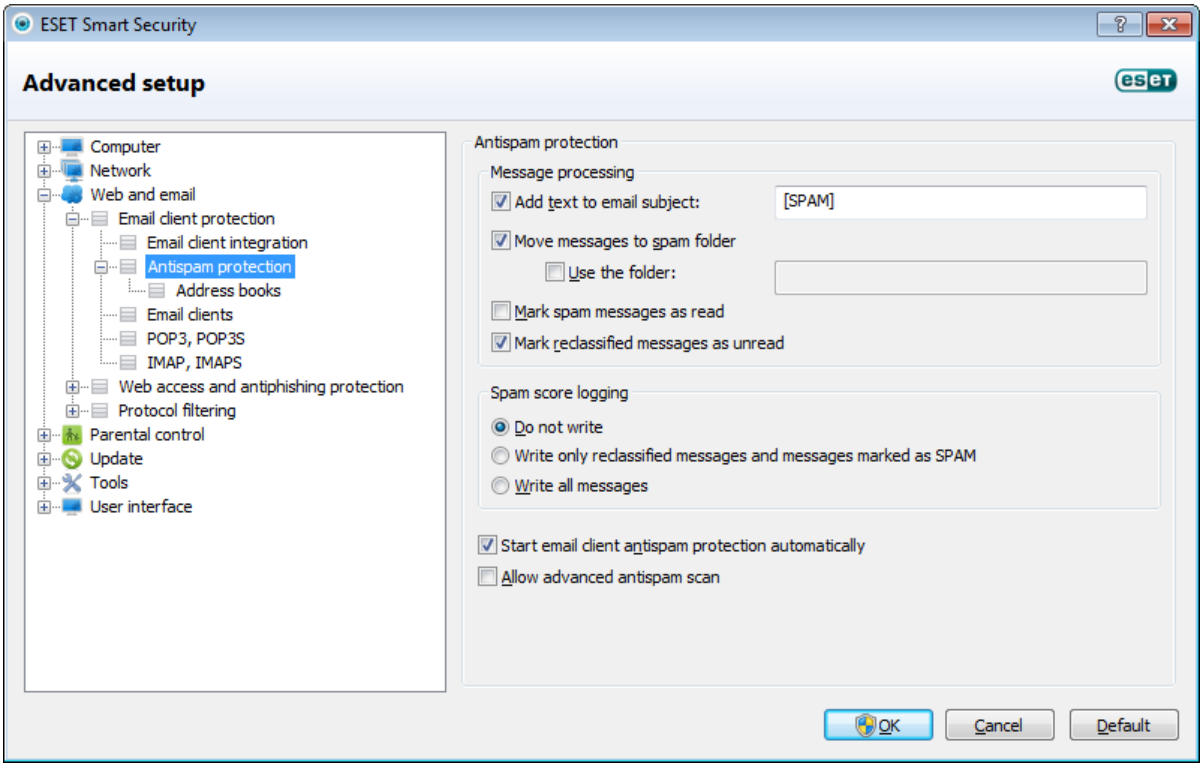
Repeat scan after update – Toggles rescanning after a virus signature database update.
Accept scan results from other modules – If this option is selected, the email protection module accepts scan results of other protection modules.

4.3.2.4 Removing infiltrations

If an infected email message is received, an alert window will display. The alert window shows the sender name, email and the name of the infiltration. In the lower part of the window the options **Clean**, **Delete** or **Leave** are available for the detected object. In almost all cases, we recommend that you select either **Clean** or **Delete**. In certain situations, if you wish to receive the infected file, select **Leave**. If **Strict cleaning** is enabled, an information window with no options available for infected objects will displayed.

4.3.3 Antispam protection

Unsolicited email, called spam, ranks among the greatest problems of electronic communication. Spam represents up to 80 percent of all email communication. Antispam protection serves to protect against this problem. Combining several efficient principles, the Antispam module provides superior filtering to keep your inbox clean.



One important principle for spam detection is the ability to recognize unsolicited email based on predefined trusted addresses (whitelist) and spam addresses (blacklist). All addresses from your contact list are automatically added to the whitelist, as well as all other addresses you mark as safe.

The primary method used to detect spam is the scanning of email message properties. Received messages are scanned for basic Antispam criteria (message definitions, statistical heuristics, recognizing algorithms and other unique methods) and the resulting index value determines whether a message is spam or not.

Antispam protection in ESET Smart Security allows you to set different parameters to work with mailing lists. Options are as follows:

Start email client antispam protection automatically – Activates/deactivates email client antispam protection.

Message processing

Add text to email subject – Enables you to add a custom prefix string to the subject line of messages that have been classified as spam. The default is "[SPAM]".

Move messages to spam folder – When enabled, spam messages will be moved to the default junk email folder.

Use the folder – This option moves spam to a user-defined folder.

Mark spam messages as read – Choose this option to automatically mark spam as read. It will help you to focus your attention on "clean" messages.

Mark reclassified messages as unread – Messages originally classified as spam, but later marked as “clean" will be displayed as unread.

Spam score logging

The ESET Smart Security Antispam engine assigns a spam score to every scanned message. The message will be recorded in the antispam log (**ESET Smart Security** > **Tools** > **Log files** > **Antispam protection**).

- **Do not write** – The **Score** cell in the Antispam protection log will be empty.
- **Write only reclassified messages and messages marked as SPAM** – Use this option if you wish to record a spam score for messages marked as SPAM.
- **Write all messages** – All messages will be recorded to the log with a spam score.

Start email client antispam protection automatically – When enabled, antispam protection will be automatically activated at system startup.

Enable advanced antispam control – Additional antispam databases will be downloaded, increasing antispam capabilities and producing better results.

ESET Smart Security supports Antispam protection for Microsoft Outlook, Outlook Express, Windows Mail, Windows Live Mail and Mozilla Thunderbird.

4.3.3.1 Adding addresses to whitelist and blacklist

Email addresses belonging to people you communicate with frequently can be added to the whitelist to ensure that no message originating from a whitelist address is ever classified as spam. Known spam addresses can be added to the blacklist and always be classified as spam. To add a new address to the whitelist or blacklist, right-click the email and select **ESET Smart Security** > **Add to Whitelist** or **Add to Blacklist**, or click the **Trusted address** or **Spam address** button in the ESET Smart Security Antispam toolbar in your email client.

Similarly, this process applies to spam addresses. If an email address is listed on the blacklist, each email message which arrives from that address is classified as spam.

4.3.3.2 Marking messages as spam

Any message viewed in your email client can be marked as spam. To do so, right-click the message and click **ESET Smart Security** > **Reclassify selected messages as spam**, or click **Spam address** in the ESET Smart Security Antispam toolbar located in the upper section of your email client.

Reclassified messages are automatically moved to the SPAM folder, but the sender's email address is not added to the Blacklist. Similarly, messages can be classified as "not spam". If messages from the **Junk E-mail** folder are classified as not spam, they are moved to their original folder. Marking a message as not spam does not automatically add the sender's address to the Whitelist.

4.3.4 Protocol filtering

Antivirus protection for the application protocols is provided by the ThreatSense scanning engine, which seamlessly integrates all advanced malware scanning techniques. The control works automatically, regardless of the Internet browser or email client used. For encrypted (SSL) communication see **Protocol filtering** > **SSL**.

Enable application protocol content filtering – If enabled, all HTTP(S), POP3(S) and IMAP(S) traffic will be checked by the antivirus scanner.

NOTE: Starting with Windows Vista Service Pack 1 and Windows 7, the new Windows Filtering Platform (WFP) architecture is used to check network communication. Since the WFP technology uses special monitoring techniques, the following options are not available:

- **HTTP and POP3 ports** – Limits routing the traffic to the internal proxy server only for HTTP and POP3 ports.
- **Applications marked as web browsers and email clients** – Limits routing the traffic to the internal proxy server only for the applications marked as browsers and email clients (**Web and email** > **Protocol filtering** > **Web and email clients**).
- **Ports and applications marked as web browsers or email clients** – Enables routing of all traffic on HTTP and POP3 ports as well as all the communication of the applications marked as browsers and email clients on the internal proxy server.

4.3.4.1 Web and email clients

NOTE: Starting with Windows Vista Service Pack 1 and Windows 7, the new Windows Filtering Platform (WFP) architecture is used to check network communication. Since the WFP technology uses special monitoring techniques, the **Web and email clients** section is not available.

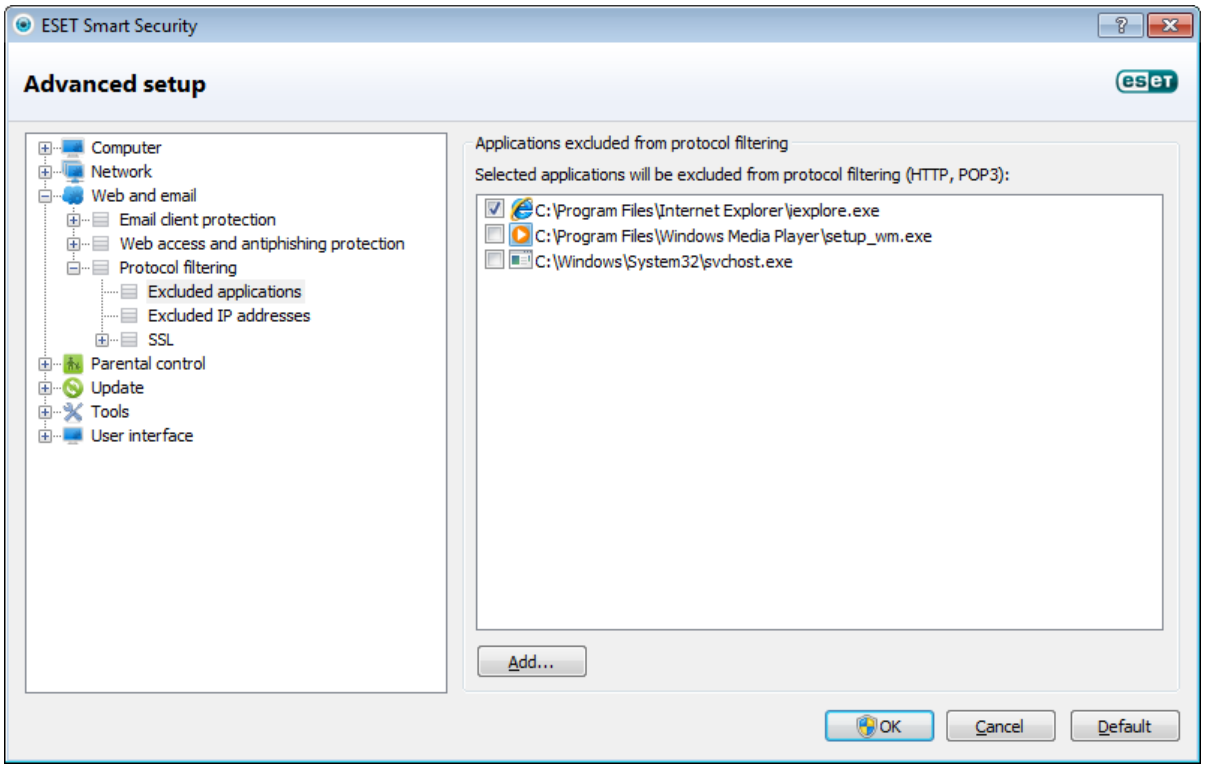
Because of the enormous amount of malicious code circulating the Internet, safe Internet browsing is a very important aspect of computer protection. Web browser vulnerabilities and fraudulent links help malicious code enter the system unnoticed which is why ESET Smart Security focuses on web browser security. Each application accessing the network can be marked as an Internet browser. The checkbox is two-state:

- **Unticked** – Communication of applications is filtered only for specified ports.
- **Ticked** – Communication is always filtered (even if a different port is set).

4.3.4.2 Excluded applications

To exclude communication of specific network-aware applications from content filtering, select them in the list. HTTP/POP3/IMAP communication of the selected applications will not be checked for threats. We recommend using this option only for applications that do not work properly with their communication being checked.

Running applications and services will be available here automatically. Click the **Add...** button to manually select an application not shown on the protocol filtering list.

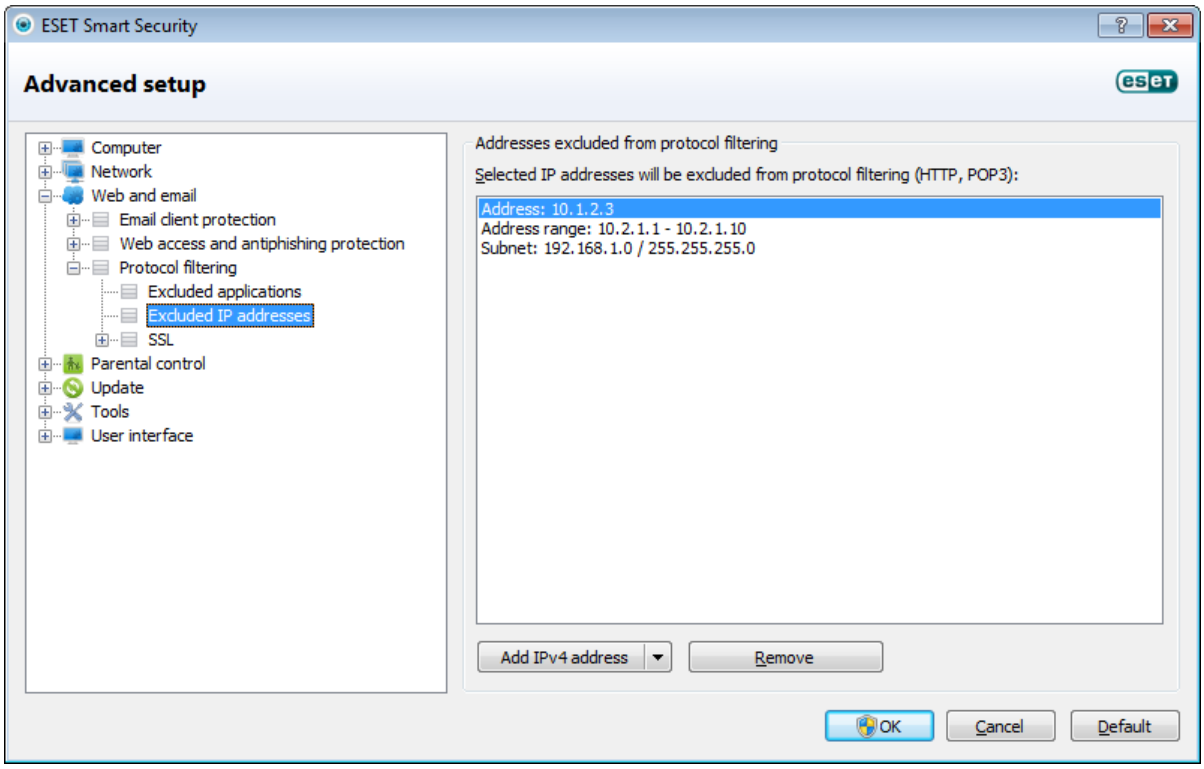


4.3.4.3 Excluded IP addresses

The entries in the addresses list will be excluded from the protocol content filtering. HTTP/POP3/IMAP communication from/to the selected addresses will not be checked for threats. We recommend using this option only for addresses that are trustworthy.

Add IPv4/IPv6 address – This options allows you to add an IP address/address range/subnet of a remote point for which the rule is to be applied.

Remove – Remove selected entries from the list.



4.3.4.3.1 Add IPv4 address

This options allows you to add an IP address/address range/subnet of a remote point for which the rule is to be applied. Internet Protocol version 4 is the older version, but still the most widely used.

Single address – Adds the IP address of an individual computer for which the rule is to be applied (for example *192.168.0.10*).

Address range – Enter the starting and ending address IP address to specify the IP range (of several computers) for which the rule is to be applied (for example *192.168.0.1* to *192.168.0.99*).

Subnet – Subnet (a group of computers) defined by an IP address and mask.

For example, *255.255.255.0* is the network mask for the *192.168.1.0/24* prefix, that means *192.168.1.1* to *192.168.1.254* address range.

4.3.4.3.2 Add IPv6 address

This options allows you to add an IPv6 address/subnet of a remote point for which the rule is applied. It is the newest version of the Internet protocol and will replace the older version 4.

Single address – Adds the IP address of an individual computer for which the rule is to be applied (for example *2001:718:1c01:16:214:22ff:fec9:ca5*).

Subnet – Subnet (a group of computers) is defined by an IP address and mask (for example: *2002:c0a8:6301:1::1/64*).

4.3.4.4 SSL protocol checking

ESET Smart Security enables you to check protocols encapsulated in SSL protocol. You can use various scanning modes for SSL protected communications using trusted certificates, unknown certificates, or certificates that are excluded from SSL-protected communication checking.

Always scan SSL protocol – Select this option to scan all SSL protected communications except communications protected by certificates excluded from checking. If a new communication using an unknown, signed certificate is established, you will not be notified and the communication will automatically be filtered. When you access a server with an untrusted certificate that is marked by you as trusted (it is added to the trusted certificates list), communication to the server is allowed and the content of the communication channel is filtered.

Ask about non-visited sites (exclusions can be set) – If you enter a new SSL protected site (with an unknown certificate), an action selection dialog is displayed. This mode enables you to create a list of SSL certificates that will be excluded from scanning.

Do not scan SSL protocol – If selected, the program will not scan communications over SSL.

Apply created exceptions based on certificates – Activates using exclusions specified in excluded and trusted certificates for scanning SSL communication. This option is available if you select **Always scan SSL protocol**.

Block encrypted communication utilizing the obsolete protocol SSL v2 – Communication using the earlier version of the SSL protocol will be automatically blocked.

4.3.4.4.1 Certificates

For SSL communication to work properly in your browsers/email clients, it is essential that the root certificate for ESET, spol. s r.o. be added to the list of known root certificates (publishers). Therefore, the **Add the root certificate to known browsers** option should be enabled. Select this option to automatically add the ESET root certificate to the known browsers (e.g. Opera, Firefox). For browsers using the system certification store, the certificate is added automatically (e.g. Internet Explorer). To apply the certificate to unsupported browsers, click **View Certificate** > **Details** > **Copy to File...** and then manually import it into the browser.

In some cases, the certificate cannot be verified using the Trusted Root Certification Authorities store (e.g. VeriSign). This means that the certificate is self-signed by someone (e.g. administrator of a web server or a small business company) and considering this certificate as trusted is not always a risk. Most large business companies (e.g. banks) use a certificate signed by TRCA. If the **Ask about certificate validity** option (default) is selected, the user will be prompted to select an action to take when encrypted communication is established. An action selection dialog will be displayed, where you can decide to mark the certificate as trusted or excluded. If the certificate is not present in the TRCA list, the window is red. If the certificate is on the TRCA list, the window will be green.

You can select the **Block communication that uses the certificate** option to always terminate an encrypted connection to the site that uses the unverified certificate.

If the certificate is invalid or corrupt, it means that the certificate expired or was incorrectly self-signed. In this case, we recommend that you block the communication that uses the certificate.

4.3.4.4.1.1 Trusted certificates

In addition to the integrated Trusted Root Certification Authorities store where ESET Smart Security stores trusted certificates, you can create a custom list of trusted certificates that can be viewed in **Advanced setup** (F5) > **Web and email** > **Protocol filtering** > **SSL** > **Certificates** > **Trusted certificates**. ESET Smart Security will check the content of encrypted communications utilizing certificates in this list.

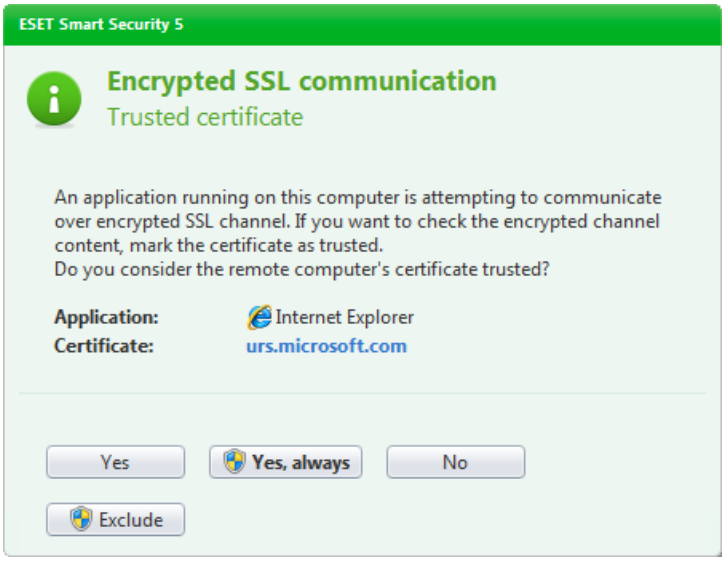
To delete the selected items from the list, click the **Remove** button. Click the **Show** option (or double-click the certificate) to display information about the selected certificate.

4.3.4.4.1.2 Excluded certificates

The Excluded certificates section contains certificates that are considered safe. The content of encrypted communications utilizing the certificates in the list will not be checked for threats. We recommend only excluding web certificates that are guaranteed to be safe and the communication utilizing the certificates does not need to be checked. To delete selected items from the list, click the **Remove** button. Click the **Show** option (or double-click the certificate) to display information about the selected certificate.

4.3.4.4.1.3 Encrypted SSL communication

If the computer is configured for SSL protocol scanning, a dialog window prompting you to choose an action may be opened when there is an attempt to establish an encrypted communication (using an unknown certificate). The dialog window contains the following information: name of the application that initiated the communication and name of the certificate used.


ESET Smart Security 5
Encrypted SSL communication
Trusted certificate
An application running on this computer is attempting to communicate over encrypted SSL channel. If you want to check the encrypted channel content, mark the certificate as trusted.
Do you consider the remote computer's certificate trusted?
Application: Internet Explorer
Certificate: urs.microsoft.com
Yes
Yes, always
No
Exclude

If the certificate is not located in the Trusted Root Certification Authorities store, it is considered to be untrusted.

ESET Smart Security 5
Encrypted SSL communication
Untrusted certificate
An application running on this computer is attempting to communicate over encrypted SSL channel. If you want to check the encrypted channel content, mark the certificate as trusted.
Do you consider the remote computer's certificate trusted?
Application: Internet Explorer
Certificate:
Yes
Yes, always
No
Exclude

The following actions are available for certificates:

Yes – The certificate will be temporarily marked as trusted for the current session – the alert window will not be displayed on the next attempt to use the certificate.

Yes, always – Marks the certificate as trusted and adds it to the list of trusted certificates – no alert windows are displayed for trusted certificates.

No – Marks the certificate as untrusted for the current session – the alert window will be displayed on the next attempt to use the certificate.

Exclude – Adds the certificate to the list of excluded certificates – data transferred over the given encrypted channel will

not be checked at all.

4.4 Parental control

The Parental control module allows you to configure parental control settings, which provide parents with automated tools to help protect their children and set restrictions for using devices and services. The goal is to prevent children and young adults from accessing pages with inappropriate or harmful content.

Parental control lets you block webpages that may contain potentially offensive material. In addition, parents can prohibit access to more than 20 pre-defined website categories and over 140 subcategories.

To activate Parental control for a specific user account, follow the steps below:

1. When Parental control is disabled in ESET Smart Security, there are two methods for activating Parental control:
   - Click **Disabled** in the **Setup** pane from the main program window and change the Parental control state to **Enabled**.
   - Press F5 to access the **Advanced Setup** tree, select **Parental Control** and then select the check box next to **Integrate into system**.
2. Click **Setup** > **Parental control** from the main program window. Even though **Enabled** appears next to **Parental control**, you must configure Parental control for the desired account by clicking **Not defined**. In the Account setup window enter an age to determine the level of access and recommended age-appropriate web pages. Parental control will now be enabled for the specified user account. Click **Setup** under an account name to customize categories you want to allow or block in the Web page content filtering tab. To allow or block custom web pages that do not match a category, click the Blocked and allowed web pages tab.

If you click **Parental control** in the **Setup** pane from the main product window of ESET Smart Security, you will see that the main window is divided into three sections.

1. Parental control

After deselecting **Enabled** on the right, a **Temporarily disable protection** window will appear. Here you can set the time interval for which protection is disabled. The option then changes to **Disabled** and all following settings will be hidden.

It is important to protect the settings in ESET Smart Security with a password. This password can be set in the Access setup section. If no password is set, a warning will appear under the **Parental control** option – *Parental control is not protected by a password!* – and **Set password...** will be visible. The restrictions set in Parental control only affect the standard user accounts. Because an Administrator can override any restriction, they will not have any effect.

HTTPS (SSL) communication is not filtered by default. Therefore the Web control cannot block web pages that begin with *https://*. To enable this feature, select **Enable** next to the SSL-encrypted webpages scan (HTTPS) disabled! warning message, or select **Always scan SSL protocol** in the **Advanced setup** > **Web and email** > **Protocol filtering** > **SSL** configuration section.

Note: Parental control requires Application protocol content filtering, HTTP protocol checking and Personal firewall system integration to be enabled in order to function properly. All of these functionalities are enabled by default.

2. Windows user accounts

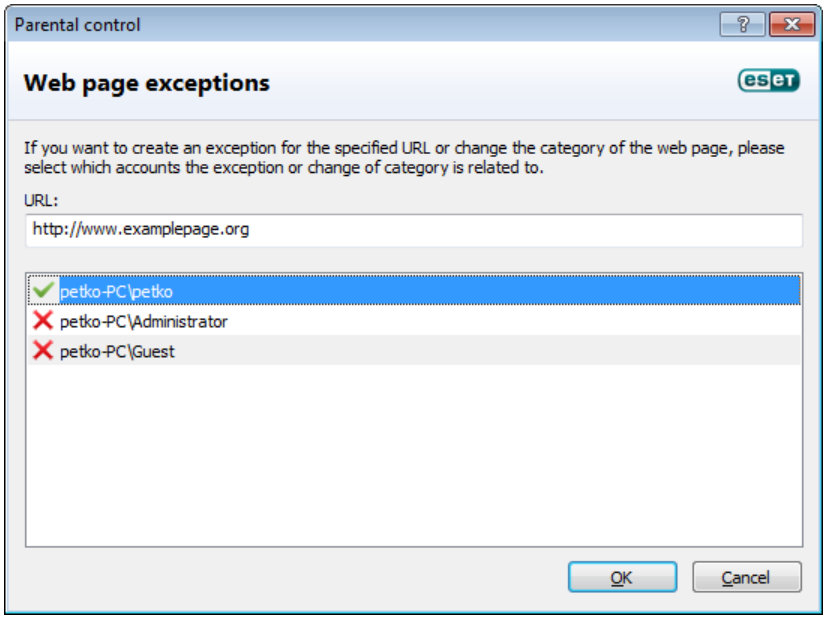
If you have created a role for an existing account, it will be shown here with the **Enabled** attribute. Clicking **Enabled** will toggle Parental control for the account. Under an active account, click **Setup...** to see the list of allowed categories of web pages for this account and blocked and allowed web pages.

Important: To create a new account (for example, for a child), use the following step-by-step instructions for Windows 7 or Windows Vista:

1. Open **User Accounts** by clicking the **Start** button (located at the bottom left side of your desktop), clicking **Control Panel** and then clicking **User Accounts**.
2. Click **Manage another account**. If you are prompted for an administrator password or confirmation, type the password or provide confirmation.
3. Click **Create a new account**.
4. Type the name you want to give the user account, click an account type, and then click **Create Account**.
5. Reopen the Parental control pane by clicking again from the main program window of ESET Smart Security to **Setup** > **Parental control**.

3. The last section contains two options

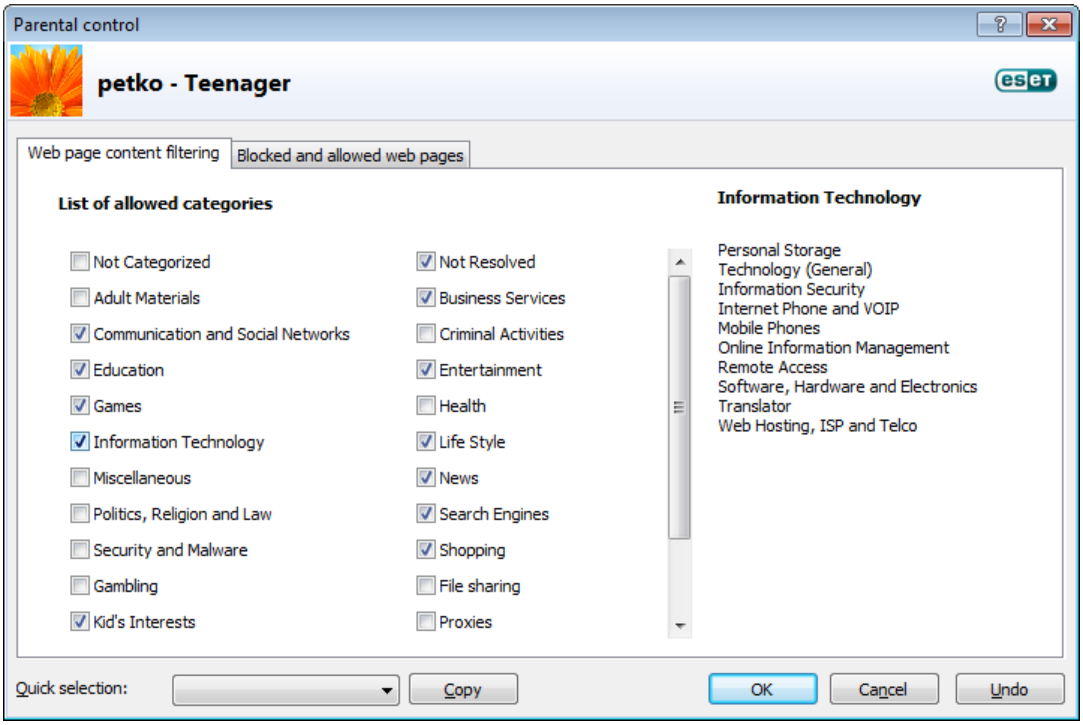
Set exception for web page... – This is a quick way to set an exception for a web page for the selected account. Enter the URL address of the web page into the **URL** field and select the account from the list below. If you select the **Block** checkbox – the web page will be blocked for this account. If you leave this checkbox blank, the web page will be allowed. Exceptions defined here are superior to the categories defined for the selected account(s). For example, if the account has the **News** category blocked, but you have defined an allowed news webpage as an exception – the account can access the allowed webpage. You can check the changes made here in the Blocked and allowed web pages section.


Parental control
Web page exceptions
eset
If you want to create an exception for the specified URL or change the category of the web page, please select which accounts the exception or change of category is related to.
URL:
http://www.examplepage.org
petko-PC\petko
petko-PC\Administrator
petko-PC\Guest
OK
Cancel

Show log – This shows a detailed log of the Parental control activity (blocked pages, the account the page was blocked for, reason, etc.). You can also filter this log based on the criteria you choose by clicking **Filter...**.

4.4.1 List of allowed categories of web pages

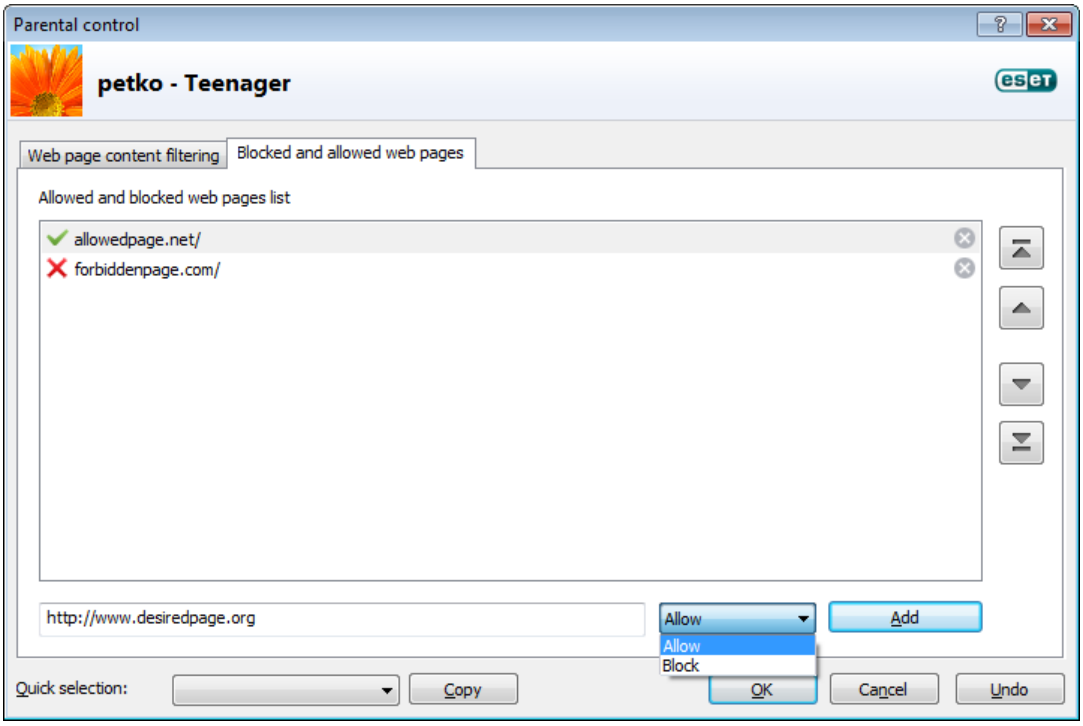
If the checkbox next to a category is selected, it is allowed. Deselect the checkbox next to a specific category to block it for the selected account. Moving the mouse over a category will show you a list of web pages that fall into that category.



The **Quick selection** option allows you to select a predefined profile (**Child**, **Parent** and **Teenager**) or a user-created account and click **Copy** to copy the **List of allowed categories** from these accounts.

4.4.2 Blocked and allowed web pages

The allowed web page list is on the left side and the list of blocked web pages is on the right side. Enter a URL address into the blank field under the list, select **Allow** or **Block** and click **Add** to add it to the list. To delete an URL address from the list, click the remove button .



In the URL address list, the special symbols * (asterisk) and ? (question mark) cannot be used. For example, web page addresses with multiple TLDs must be entered manually (*examplepage.com*, *examplepage.sk*, etc.). When you enter a domain to the list, all content located on this domain and all subdomains (e.g. *sub.examplepage.com*) will be blocked or

allowed based on your choice of URL-based action.

Note: Blocking or allowing a specific web page can be more accurate than blocking or allowing a whole category of web pages. Be careful when changing these settings and adding a category/web page to the list.

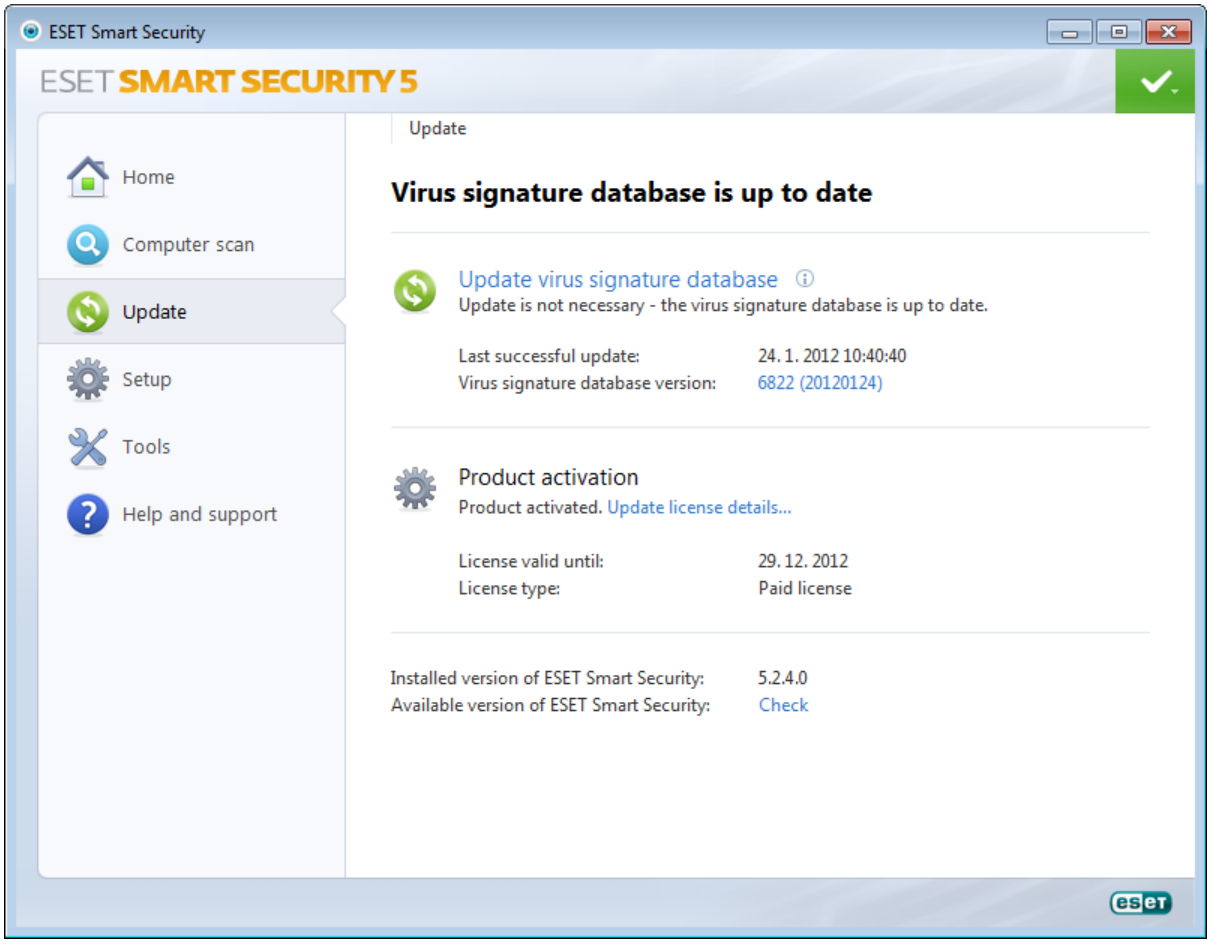
4.5 Updating the program

Regularly updating ESET Smart Security is the best method to obtain the maximum level of security on your computer. The Update module ensures that the program is always up to date in two ways, by updating the virus signature database and by updating system components.

By clicking **Update** in the main program window, you can find the current update status including the date and time of the last successful update and if an update is needed. The primary window also contains the virus signature database version. This numeric indicator is an active link to ESET's website, listing all signatures added within the given update.

In addition, the option to manually begin the update process, **Update virus signature database** is available. Updating the virus signature database and updating program components are important parts of maintaining complete protection against malicious code. Please pay attention to their configuration and operation. If you did not enter your License details (username and password) during installation, you can enter your username and password when updating to access ESET's update servers.

NOTE: Your username and password are provided by ESET after purchasing ESET Smart Security.



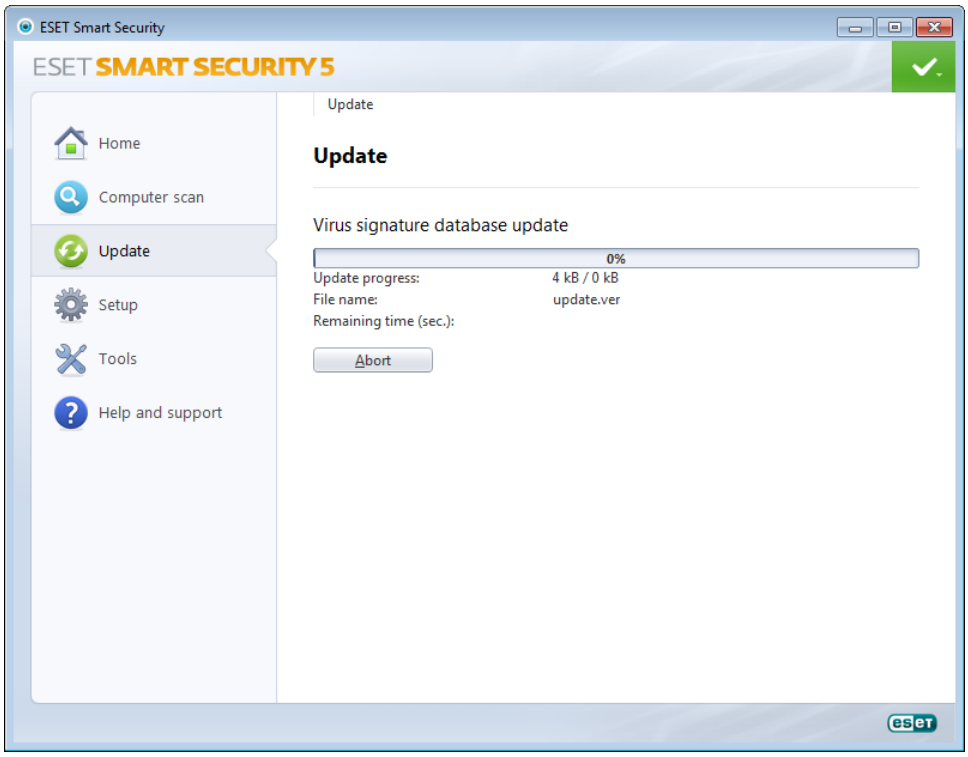
Last successful update – The date of the last update. Make sure it refers to a recent date, which means that the virus signature database is current.

Virus signature database version – The virus signature database number, which is also an active link to ESET's website. Click it to view a list of all signatures added within the given update.

Click **Check** to detect the latest available version of ESET Smart Security.

Update process

After clicking **Update virus signature database**, the download process begins. A download progress bar and remaining time to download will be displayed. To interrupt the update, click **Abort**.

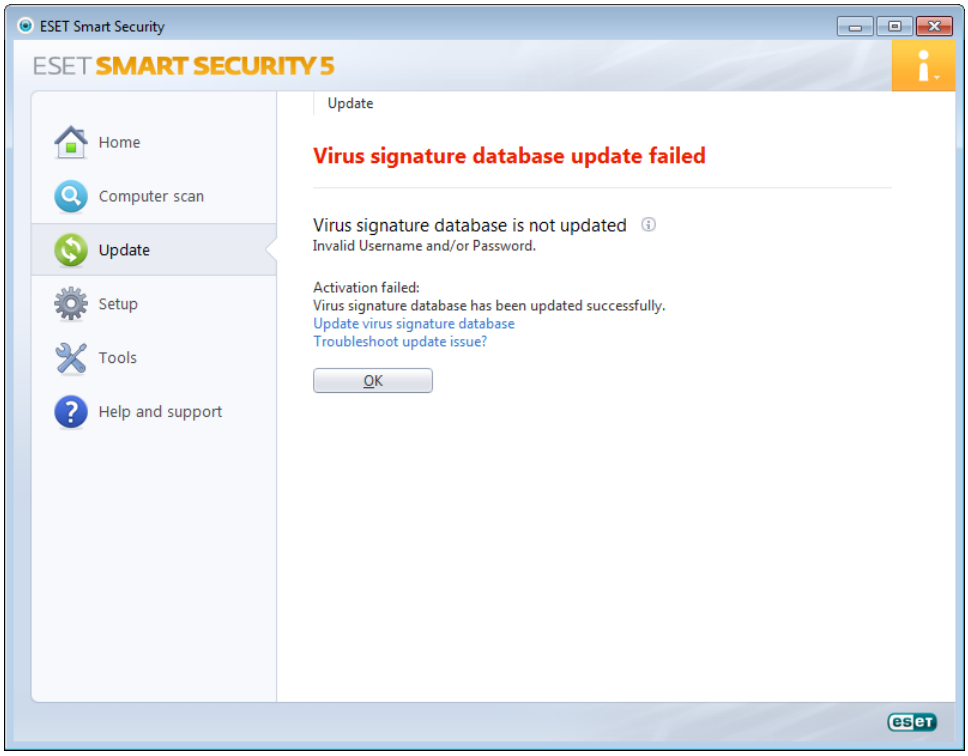


Important: Under normal circumstances, when updates are downloaded properly the message **Update is not necessary – Virus signature database is up to date** will appear in the **Update** window. If this is not the case, the program is out of date and more vulnerable to infection. Please update the virus signature database as soon as possible. Otherwise, one of the following messages will be displayed:

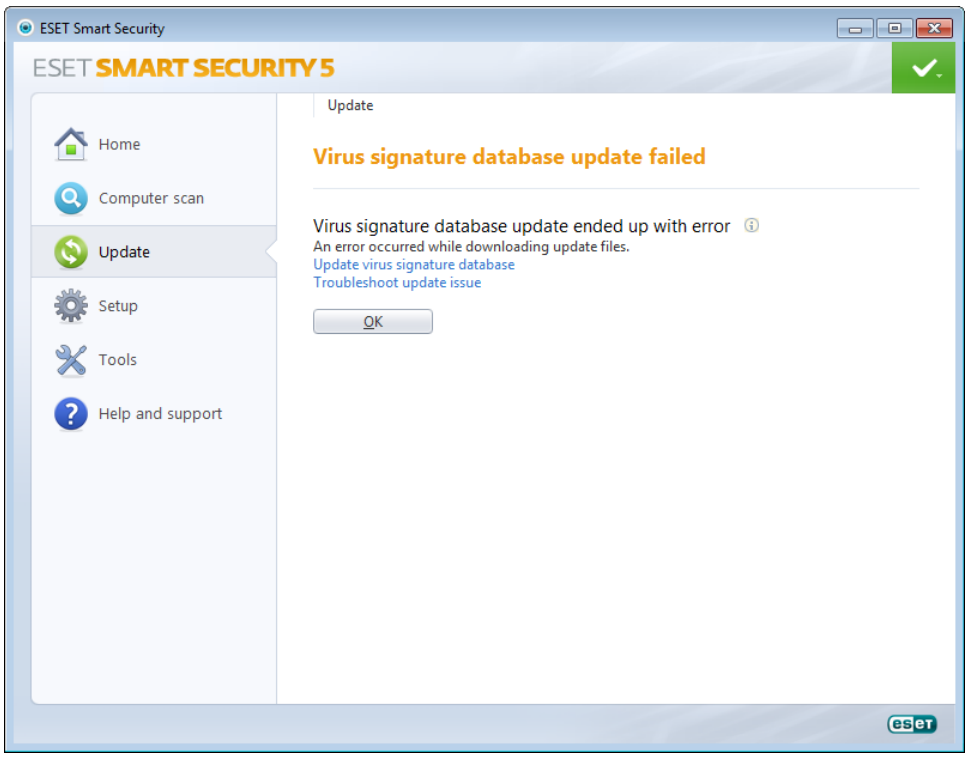
Virus signature database is out of date – This error will appear after several unsuccessful attempts to update the virus signature database. We recommend that you check the update settings. The most common reason for this error is incorrectly entered authentication data or incorrectly configured connection settings.

The previous notification is related to the following two **Virus signature database update failed** messages about unsuccessful updates:

1. **Invalid Username and/or Password** – The username and password have been incorrectly entered in update setup. We recommend that you check your authentication data. The Advanced setup window (click **Setup** from the main menu and then click **Enter advanced setup...**, or press F5 on your keyboard) contains additional update options. Click **Update** > **Update** in the Advanced setup tree to enter a new username and password.



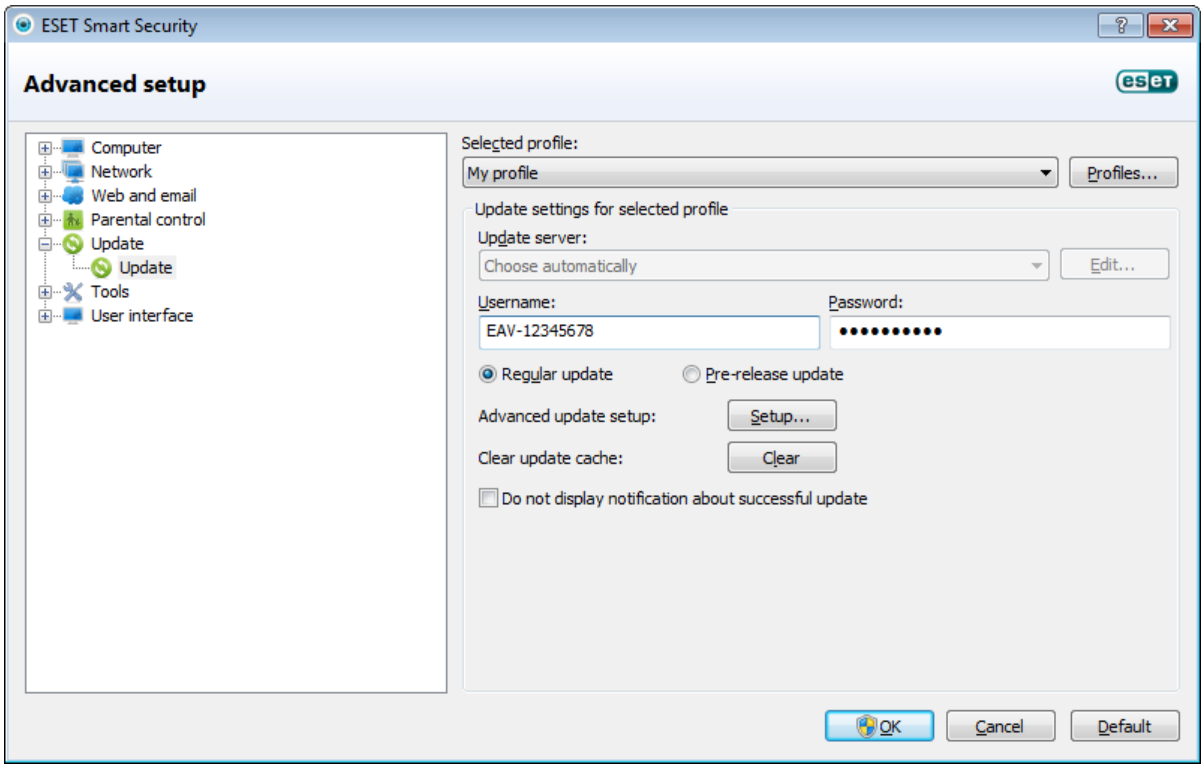
2. **An error occurred while downloading update files** – A possible cause of the error is incorrect Internet connection settings. We recommend that you check your Internet connectivity (by opening any website in your web browser). If the website does not open, it is likely that an Internet connection is not established or there are connectivity problems with your computer. Please check with your Internet Service Provider (ISP) if you do not have an active Internet connection.



4.5.1 Update setup

Update setup options are available from the **Advanced setup** tree (F5 key) by clicking **Update** > **Update**. This section specifies update source information, such as the update servers and authentication data for these servers. By default, the **Update server** drop-down menu is set to **Choose automatically** to ensure that update files will automatically download from the ESET server with the least network traffic.

For updates to be downloaded properly, it is essential to correctly fill in all parameters. If you use a firewall, please make sure that the program is allowed to communicate with the Internet (i.e., HTTP communication).



The currently used update profile is displayed in the **Selected profile** drop-down menu. Click **Profiles...** to create a new profile.

Authentication for update servers is based on the **Username** and **Password** generated and sent to you after purchase. When using a local Mirror server, the verification depends on its configuration. By default, no verification is required, i. e., the **Username** and **Password** fields are left empty.

Pre-release updates (the **Pre-release update** option) are updates which have gone through thorough internal testing and will be generally available soon. You can benefit from enabling pre-release updates by having access to the most recent detection methods and fixes. However, pre-release updates might not be stable enough at all times and SHOULD NOT be used on production servers and workstations where maximum availability and stability is required. The list of current modules can be found in **Help and support** > **About ESET Smart Security**. It is recommended that basic users leave the **Regular update** option selected by default.

Click the **Setup...** button next to **Advanced update setup** to display a window containing advanced update options.

If you experience problems with an update, click the **Clear...** button to flush the folder with temporary update files.

Do not display notification about successful update – Turns off the system tray notification at the bottom right corner of the screen. It is useful to select this option if a full screen application or a game is running. Please note that Gamer mode will turn off all notifications.

4.5.1.1 Update profiles

Update profiles can be created for various update configurations and tasks. Creating update profiles is especially useful for mobile users, who can create an alternative profile for Internet connection properties that regularly change.

The **Selected profile** drop-down menu displays the currently selected profile, set to **My profile** by default. To create a new profile, click the **Profiles...** button and then click the **Add...** button and enter your own **Profile name**. When creating a new profile, you can copy settings from an existing one by selecting it from the **Copy settings from profile** drop-down menu.

In the profile setup window, you can specify the update server from a list of available servers or add a new server. The list of existing update servers is listed in the **Update server** drop-down menu. To add a new update server, click **Edit...** in the **Update settings for selected profile** section and then click the **Add** button.

4.5.1.2 Advanced update setup

To view the Advanced update setup, click the **Setup...** button. Advanced update setup options include configuration of **Update mode**, **HTTP Proxy** and **LAN**.

4.5.1.2.1 Update mode

The **Update mode** tab contains options related to the program component update. The program enables you to predefine its behavior when a new program component upgrade is available.

Program component updates brings new features or makes changes to those that already exist from previous versions. It can be performed automatically without user intervention, or you can choose to be notified. After a program component update has been installed, a computer restart may be required. In the **Program component update** section, three options are available:

- **Never update program components** – Program component updates will not be performed at all. This option is suitable for server installations, since servers can usually be restarted only when they are undergoing maintenance.
- **Always update program components** – A program component update will be downloaded and installed automatically. Please remember that a computer restart may be required.
- **Ask before downloading program components** – The default option. You will be prompted to confirm or refuse program component updates when they are available.

After a program component update, it may be necessary to restart your computer to provide full functionality of all modules. The **Restart after program component upgrade** section allows you to select one of the following options:

- **Never restart computer** – You will not be asked to restart, even if it is required. Please note that this is not recommended, since your computer might not work properly until the next restart.
- **Offer computer restart if necessary** – The default option. After a program component update, you will be prompted to restart your computer in a dialog window.
- **If necessary, restart computer without notifying** – After a program component upgrade, your computer will be restarted (if required).

NOTE: Selecting the most appropriate option depends on the workstation where the settings will be applied. Please be aware that there are differences between workstations and servers – e.g., restarting the server automatically after a program upgrade could cause serious damage.

If the **Ask before downloading update** option is checked, a notification will display when a new update is available.

If the update file size is greater than the value specified in the **Ask if an update file is greater than** field, the program will display a notification.

The **Regularly check for latest product version** option will enable the **Regular checking for latest product version** scheduled task (see Scheduler).

4.5.1.2.2 Proxy server

To access the proxy server setup options for a given update profile, click **Update** in the Advanced setup tree (F5) and then click the **Setup...** button to the right of **Advanced update setup**. Click the **HTTP Proxy** tab and select one of the three following options:

- **Use global proxy server settings**
- **Do not use proxy server**
- **Connection through a proxy server**

Selecting the **Use global proxy server settings** option will use the proxy server configuration options already specified within the **Tools** > **Proxy server** branch of the Advanced setup tree.

Select the **Do not use proxy server** option to specify that no proxy server will be used to update ESET Smart Security.

The **Connection through a proxy server** option should be selected if:

- A proxy server should be used to update ESET Smart Security that is different from the proxy server specified in the global settings (**Tools** > **Proxy server**). If so, the settings should be specified here: **Proxy server** address, communication **Port**, plus **Username** and **Password** for the proxy server if required.
- The proxy server settings were not set globally, but ESET Smart Security will connect to a proxy server for updates.
- Your computer is connected to the Internet via a proxy server. The settings are taken from Internet Explorer during program installation, but if they are subsequently changed (e.g. if you change your ISP), please check that the HTTP proxy settings are correct in this window. Otherwise the program will not be able to connect to the update servers.

The default setting for the proxy server is **Use global proxy server settings**.

NOTE: Authentication data such as **Username** and **Password** are intended for accessing the proxy server. Fill in these fields only if a username and password are required. Please note that these fields are not for your username/password for ESET Smart Security, and should only be supplied if you know you need a password to access the internet via a proxy server.

4.5.1.2.3 Connecting to the LAN

When updating from a local server with an NT-based operating system, authentication for each network connection is required by default. In most cases, a local system account does not have sufficient rights to access the Mirror folder (the Mirror folder contains copies of update files). If this is the case, enter the username and password in the update setup section or specify an existing account under which the program will access the update server (Mirror).

To configure such an account, click the **LAN** tab. The **Connect to LAN as** section offers the **System account (default)**, **Current user**, and **Specified user** options.

Select the **System account (default)** option to use the system account for authentication. Normally, no authentication process takes place if there is no authentication data supplied in the main update setup section.

To ensure that the program authenticates using a currently logged-in user account, select **Current user**. The drawback of this solution is that the program is not able to connect to the update server if no user is currently logged in.

Select **Specified user** if you want the program to use a specific user account for authentication. Use this method when the default system account connection fails. Please be aware that the specified user account must have access to the update files directory on the local server. Otherwise the program will not be able to establish a connection and download updates.

Warning: When either **Current user** or **Specified user** is selected, an error may occur when changing the identity of the program to the desired user. We recommend entering the LAN authentication data in the main update setup section. In this update setup section, the authentication data should be entered as follows: *domain_name\user* (if it is a workgroup, enter *workgroup_name\name*) and password. When updating from the HTTP version of the local server, no authentication is required.

Select the **Disconnect from server after update** option if connection to the server remains active even after updates have been downloaded.

4.5.2 How to create update tasks

Updates can be triggered manually by clicking **Update virus signature database** in the primary window displayed after clicking **Update** from the main menu.

Updates can also be run as scheduled tasks. To configure a scheduled task, click **Tools** > **Scheduler**. By default, the following tasks are activated in ESET Smart Security:

- **Regular automatic update**
- **Automatic update after dial-up connection**
- **Automatic update after user logon**

Each update task can be modified to meet your needs. In addition to the default update tasks, you can create new update tasks with a user-defined configuration. For more details about creating and configuring update tasks, see section Scheduler.

4.6 Tools

The **Tools** menu includes modules that help simplify program administration and offer additional options for advanced users.

This menu includes the following tools:

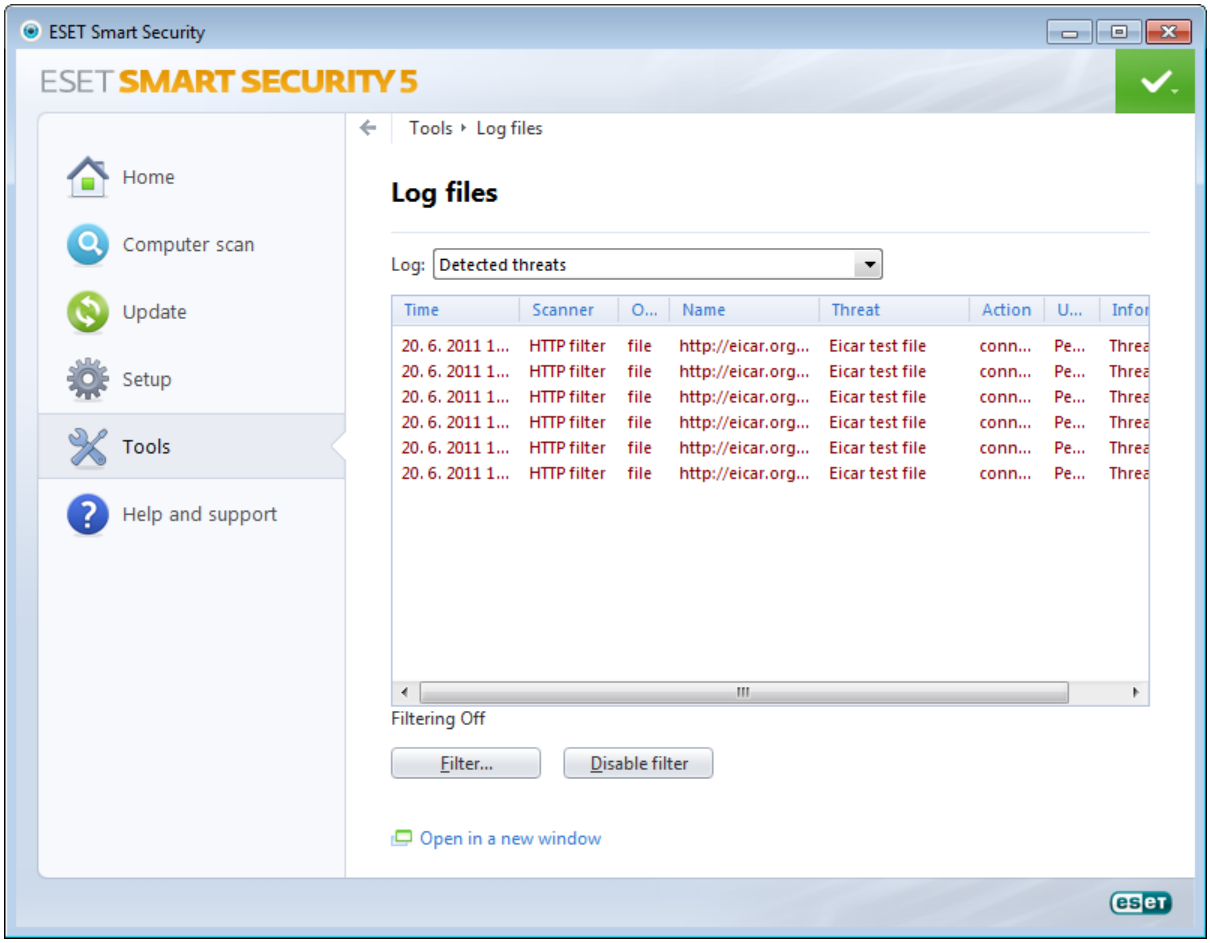
- Log files
- Protection statistics
- Watch activity
- Running processes
- Scheduler
- Quarantine
- Network connections
- ESET SysInspector

Submit file for analysis – Allows you to submit a suspicious file for analysis to ESET's Virus Lab. The dialog window displayed after clicking this option is described in the Submission of files for analysis section.

ESET SysRescue – Launches the ESET SysRescue creation wizard.

4.6.1 Log files

Log files contain information about all important program events that have occurred and provide an overview of detected threats. Logging acts as an essential tool in system analysis, threat detection and troubleshooting. Logging is performed actively in the background with no user interaction. Information is recorded based on the current log verbosity settings. It is possible to view text messages and logs directly from the ESET Smart Security environment, as well as to archive logs.


ESET Smart Security
ESET SMART SECURITY 5
Tools ▸ Log files
Home
Computer scan
Update
Setup
Tools
Help and support
Log files
Log: Detected threats
Time Scanner O... Name Threat Action U... Infor
20. 6. 2011 1... HTTP filter file http://eicar.org... Eicar test file conn... Pe... Threa
20. 6. 2011 1... HTTP filter file http://eicar.org... Eicar test file conn... Pe... Threa
20. 6. 2011 1... HTTP filter file http://eicar.org... Eicar test file conn... Pe... Threa
20. 6. 2011 1... HTTP filter file http://eicar.org... Eicar test file conn... Pe... Threa
20. 6. 2011 1... HTTP filter file http://eicar.org... Eicar test file conn... Pe... Threa
20. 6. 2011 1... HTTP filter file http://eicar.org... Eicar test file conn... Pe... Threa
Filtering Off
Filter...
Disable filter
Open in a new window
eset

Log files are accessible from the main program window by clicking **Tools** > **Log files**. Select the desired log type from the **Log** drop-down menu. The following logs are available:

- **Detected threats** – The threat log offers detailed information about infiltrations detected by ESET Smart Security modules. The information includes the time of detection, name of infiltration, location, the performed action and the name of the user logged in at the time the infiltration was detected. Double-click any log entry to display its details in a separate window.
- **Events** – All important actions performed by ESET Smart Security are recorded in the event log. The event log contains information about events and errors that have occurred in the program. It is designed for system administrators and users to solve problems. Often the information found here can help you find a solution for a problem occurring in the program.
- **Computer scan** – Results of all completed manual or planned scans are displayed in this window. Each line corresponds to a single computer control. Double-click any entry to view details of the respective scan.
- **HIPS** – Contains records of specific rules which were marked for recording. The protocol shows the application that called the operation, the result (whether the rule was permitted or prohibited) and the created rule name.
- **Personal firewall** – The firewall log displays all remote attacks detected by the Personal firewall. Here you will find information about any attacks on your computer. The *Event* column lists the detected attacks. The *Source* column tells you more about the attacker. The *Protocol* column reveals the communication protocol used for the attack. Analysis of the firewall log may help you to detect system infiltration attempts in time to prevent unauthorized access to your

system.

- **Antispam protection** – Contains records related to email messages that were marked as spam.
- **Parental control** – Shows web pages blocked or allowed by Parental control. The *Match type* and *Match values* columns tell you how the filtering rules were applied.

In each section, the displayed information can be directly copied to the clipboard (keyboard shortcut Ctrl + C) by selecting the entry and clicking **Copy**. To select multiple entries, the CTRL and SHIFT keys can be used.

You can show the context menu by right-clicking on a specific record. The following options are available in the context menu:

- **Filter records of the same type** – After activating this filter, you will only see records of the same type (diagnostics, warnings, ...).
- **Filter.../Find...** – After clicking this option, a **Log filtering** window will pop up where you can define the filtering criteria.
- **Disable filter** – Clears all filter settings (as described above).
- **Copy all** – Copies information about all the records in the window.
- **Delete/Delete all** – Deletes the selected record(s) or all the records displayed – this action requires administrator privileges.
- **Export** – Exports information about the record(s) in XML format.
- **Scroll log** – Leave this option enabled to auto scroll old logs and watch active logs in the **Log files** window.

4.6.1.1 Log maintenance

Log files configuration of ESET Smart Security is accessible from the main program window. Click **Setup** > **Enter advanced setup...** > **Tools** > **Log files**. The Log files section is used to define how the logs will be managed. The program automatically deletes older logs in order to save hard disk space. You can specify the following options for log files:

Delete records automatically – Log entries older than the specified number of days in the **Delete records older than X days** field will be automatically deleted.

Optimize log files automatically – If checked, log files will be automatically be defragmented if the percentage is higher than value specified in the **If the number of unused records exceeds (%)** field.

Click **Optimize now** to start the defragmenting the log files. All empty log entries are removed during this process, which improves performance and speed when processing the logs. This improvement can be observed especially if the logs contain a large number of entries.

Minimum logging verbosity – Specifies the minimum verbosity level of events to be logged.

- **Diagnostic** – Logs information needed to fine-tune the program and all records above.
- **Informative** – Records informative messages, including successful update messages, plus all records above.
- **Warnings** – Records critical errors and warning messages.
- **Errors** – Errors such as *"Error downloading file"* and critical errors will be recorded.
- **Critical** – Logs only critical errors (error starting Antivirus protection, Personal firewall, etc...).

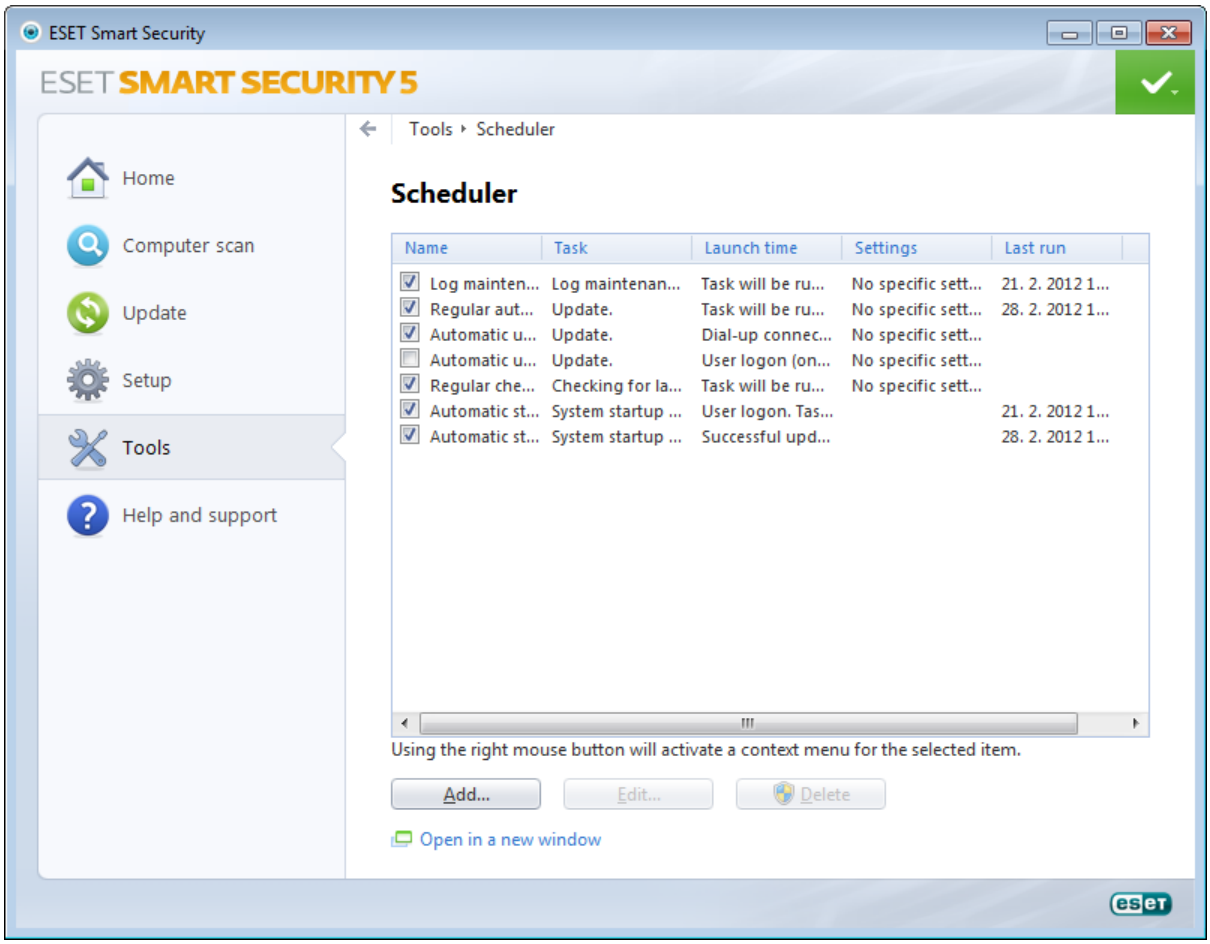
Click the **Default filter...** button to open the **Log filtering** window. Check record types to be displayed in logs and click **OK**.

4.6.2 Scheduler

Scheduler manages and launches scheduled tasks with predefined configuration and properties.

The Scheduler can be accessed from the ESET Smart Security main program window by clicking **Tools** > **Scheduler**. The **Scheduler** contains a list of all scheduled tasks and configuration properties such as the predefined date, time and scanning profile used.

The Scheduler serves to schedule the following tasks: virus signature database update, scanning task, system startup file check and log maintenance. You can add or delete tasks directly from the main Scheduler window (click **Add...** or **Delete** at the bottom). Right click anywhere in the Scheduler window to perform the following actions: display detailed information, perform the task immediately, add a new task, and delete an existing task. Use the checkboxes at the beginning of each entry to activate/deactivate the tasks.


ESET Smart Security
ESET SMART SECURITY 5
Home
Computer scan
Update
Setup
Tools
Help and support
Tools › Scheduler
Scheduler
Name
Task
Launch time
Settings
Last run
Log mainten... Log maintenan... Task will be ru... No specific sett... 21. 2. 2012 1...
Regular aut... Update. Task will be ru... No specific sett... 28. 2. 2012 1...
Automatic u... Update. Dial-up connec... No specific sett...
Automatic u... Update. User logon (on... No specific sett...
Regular che... Checking for la... Task will be ru... No specific sett...
Automatic st... System startup ... User logon. Tas... 21. 2. 2012 1...
Automatic st... System startup ... Successful upd... 28. 2. 2012 1...
Using the right mouse button will activate a context menu for the selected item.
Add...
Edit...
Delete
Open in a new window
eset

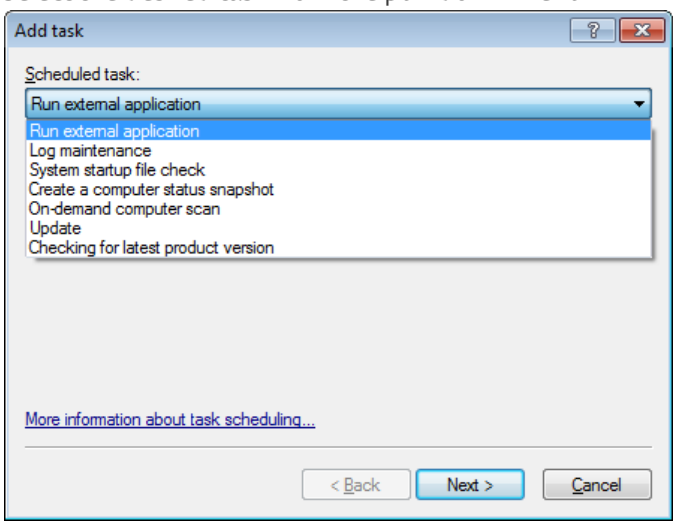
By default, the following scheduled tasks are displayed in **Scheduler**:

- **Log maintenance**
- **Regular automatic update**
- **Automatic update after dial-up connection**
- **Automatic update after user logon**
- **Regular checking for latest product version** (see Update mode)
- **Automatic startup file check** (after user logon)
- **Automatic startup file check** (after successful update of the virus signature database)

To edit the configuration of an existing scheduled task (both default and user-defined), right-click the task and click **Edit...** or select the task you wish to modify and click the **Edit...** button.

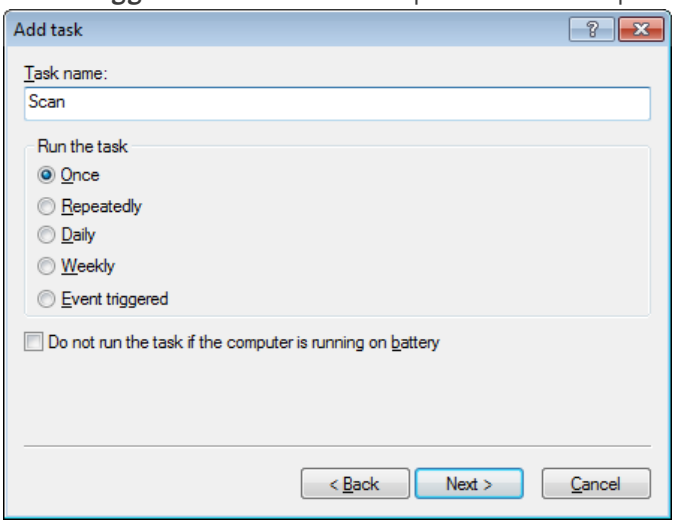
Add a new task

1. Click **Add...** at the bottom of the window.
2. Select the desired task from the pull-down menu.



3. Enter a name of the task and select one of the timing options:

- **Once** – The task will be performed only once, at the predefined date and time.
- **Repeatedly** – The task will be performed at the specified interval (in hours).
- **Daily** – The task will run each day at the specified time.
- **Weekly** – The task will run once or more times a week, on the selected day(s) and time.
- **Event triggered** – The task will be performed on a specified event.



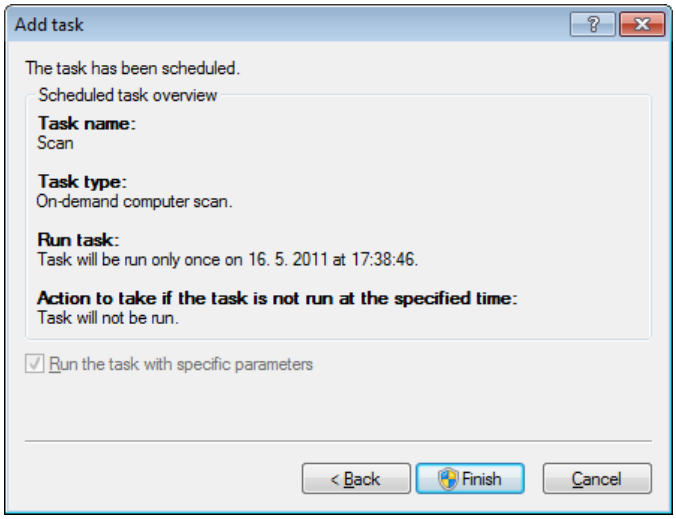
4. Depending on the timing option you choose in the previous step, one of the following dialog windows will be displayed:

- **Once** – The task will be performed at the predefined date and time.
- **Repeatedly** – The task will be performed at the specified time interval.
- **Daily** – The task will run repeatedly each day at the specified time.
- **Weekly** – The task will be run on the selected day and time.

5. If the task could not be run at the predefined time, you can specify when it will be performed again:

- Wait until the next scheduled time
- Run the task as soon as possible
- Run the task immediately if the time since the last task execution exceeds -- hours

6. In the last step you can review the task to be scheduled. Click **Finish** to apply the task.


Add task
The task has been scheduled.
Scheduled task overview
Task name:
Scan
Task type:
On-demand computer scan.
Run task:
Task will be run only once on 16. 5. 2011 at 17:38:46.
Action to take if the task is not run at the specified time:
Task will not be run.
Run the task with specific parameters
< Back
Finish
Cancel

4.6.2.1 Creating new tasks

To create a new task in Scheduler, click the **Add...** button or right-click and select **Add...** from the context menu. Five types of scheduled tasks are available:

- **Run external application** – Schedules the execution of an external application.
- **Log maintenance** – Log files also contains leftovers from deleted records. This task optimizes records in log files on a regular basis to work effectively.
- **System startup file check** – Checks files that are allowed to run at system startup or logon.
- **Create a computer status snapshot** – Creates an ESET SysInspector computer snapshot – gathers detailed information about system components (e.g. drivers, applications) and assesses the risk level of each component.
- **Computer scan** – Performs a computer scan of files and folders on your computer.
- **Update** – Schedules an Update task by updating the virus signature database and by updating program modules.
- **Checking for latest product version**

Since **Update** is one of the most frequently used scheduled tasks, we will explain how to add a new update task below.

From the **Scheduled task** drop-down menu, select **Update**. Click **Next** and enter the name of the task into the **Task name** field. Select the frequency of the task. The following options are available: **Once**, **Repeatedly**, **Daily**, **Weekly** and **Event triggered**. Use the **Do not run the task if the computer is running on battery** option to minimize system resources while a laptop is running on battery power. Based on the frequency selected, you will be prompted with different update parameters. Next, define what action to take if the task cannot be performed or completed at the scheduled time. The following three options are available:

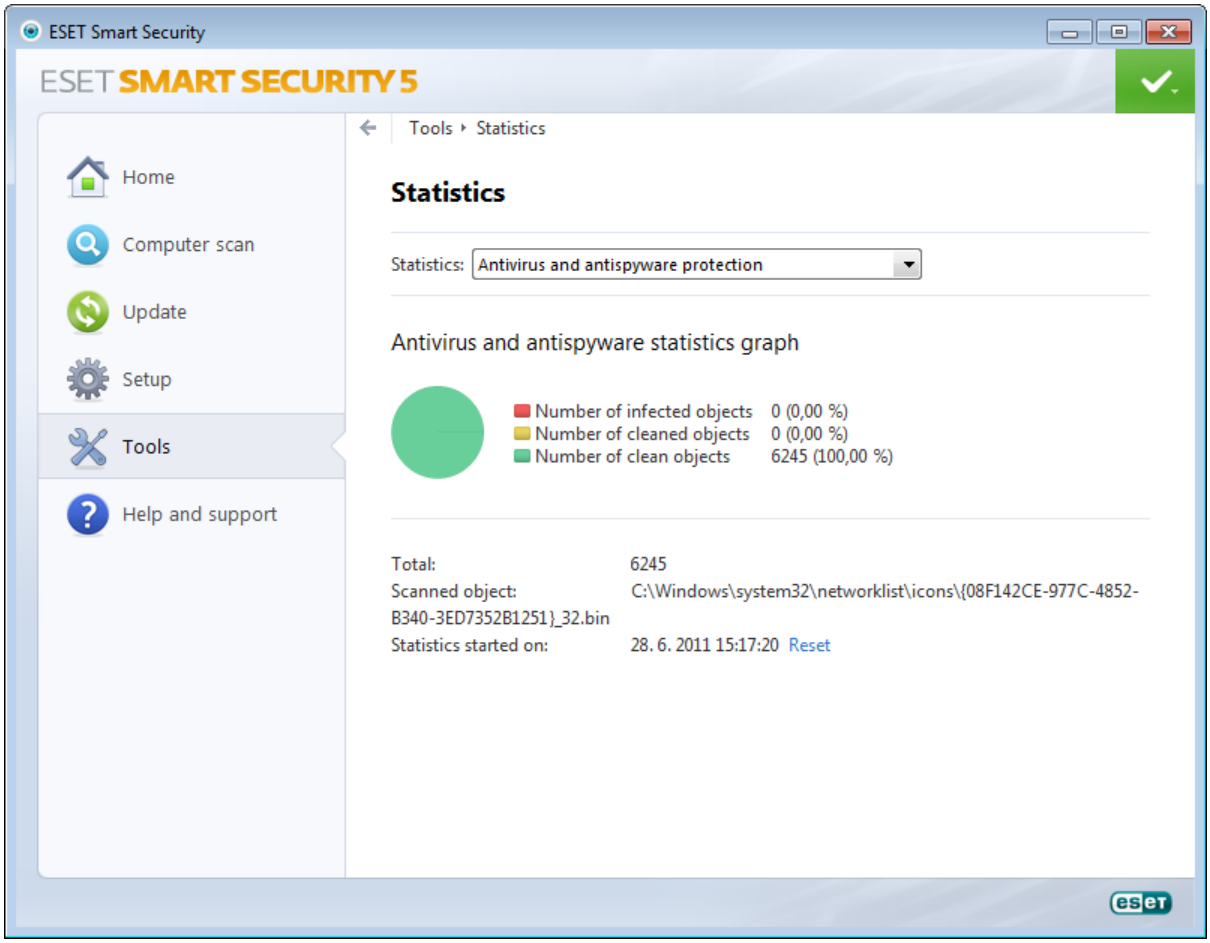
- **Wait until the next scheduled time**
- **Run task as soon as possible**
- **Run task immediately if the time since its last execution exceeds specified interval** (the interval can be defined using the Task interval scroll box)

In the next step, a summary window with information about the current scheduled task is displayed; the option **Run task with specific parameters** should be automatically enabled. Click the **Finish** button.

A dialog window will appear, allowing you to select profiles to be used for the scheduled task. Here you can specify a primary and alternative profile, which is used if the task cannot be completed using the primary profile. Confirm by clicking **OK** in the **Update profiles** window. The new scheduled task will be added to the list of currently scheduled tasks.

4.6.3 Protection statistics

To view a graph of statistical data related to ESET Smart Security's protection modules, click **Tools** > **Protection statistics**. Select the desired protection module from the **Statistics** drop-down menu to see the corresponding graph and legend. If you mouse over an item in the legend, only the data for that item will display in the graph.



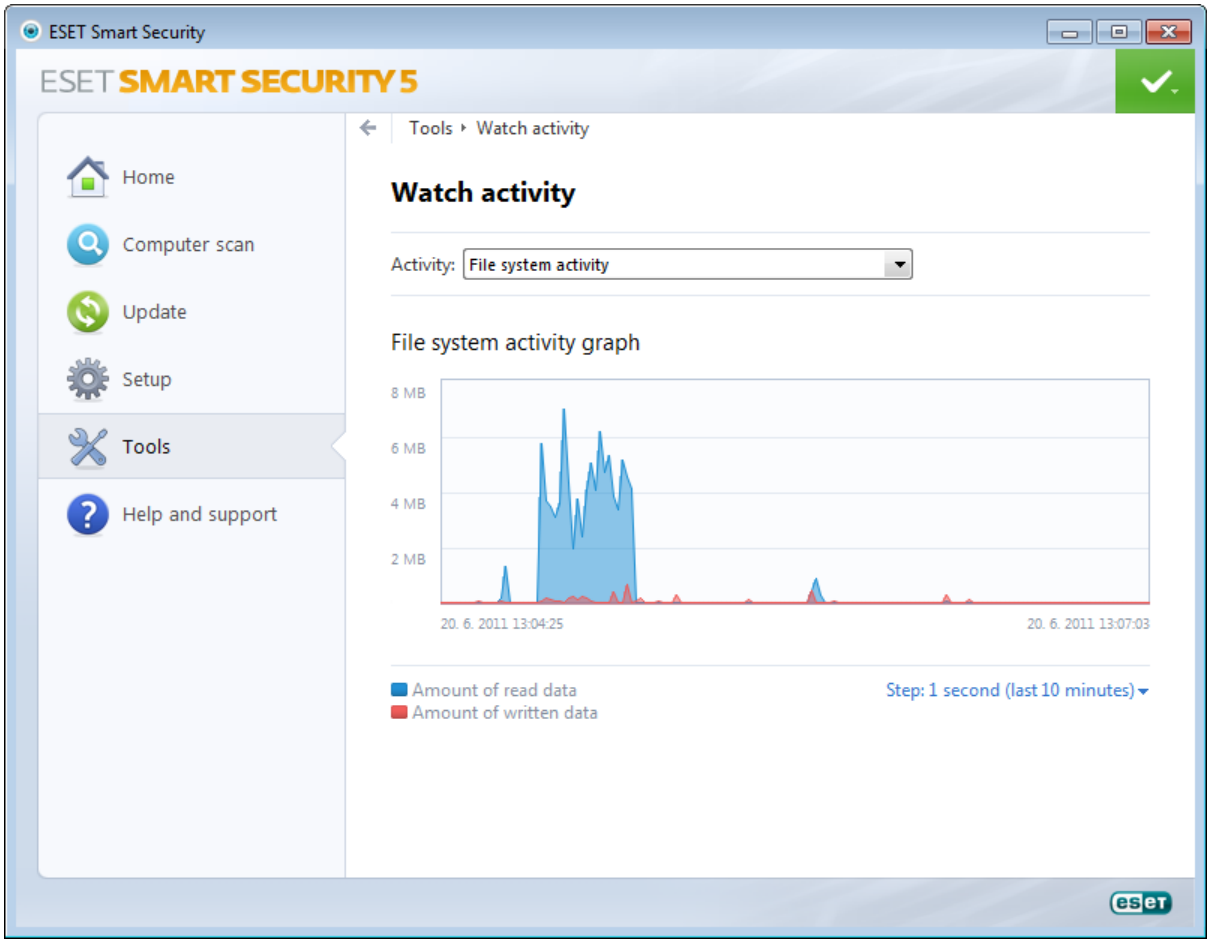
The following statistic graphs are available:

- **Antivirus and Antispyware protection** – Displays the number of infected and cleaned objects.
- **File system protection** – Only displays objects that were read or written to the file system.
- **Email client protection** – Only displays objects that were sent or received by email clients.
- **Web access and antiphishing protection** – Only displays objects downloaded by web browsers.
- **Email client antispam protection** – Displays the history of antispam statistics since the last startup.

Below the statistics graphs, you can see the number of total scanned objects, latest scanned object and the statistics timestamp. Click **Reset** to clear all statistics information.

4.6.4 Watch activity

To see the current **File system activity** in graph form, click **Tools** > **Watch activity**. At the bottom of the graph is a timeline which records File system activity real-time based on the selected time span. To change the time span, click the **Step 1...** option located at the bottom-right of the window.



The following options are available:

- **Step: 1 second (last 10 minutes)** – The graph refreshes every second and the timeline covers the last 10 minutes
- **Step: 1 minute (last 24 hours)** – The graph is refreshed every minute and the timeline covers the last 24 hours
- **Step: 1 hour (last month)** – The graph is refreshed every hour and the timeline covers the last month
- **Step: 1 hour (selected month)** – The graph is refreshed every hour and the timeline covers the last X selected months

The vertical axis of the **File system activity graph** represents read data (blue) and written data (red). Both values are given in KB (kilobytes)/MB/GB. If you mouse over either read data or written data in the legend below the graph, the graph will only display data for that activity type.

You can also select to view **Network activity** from the **Activity** drop-down menu. The graph display and options for **File system activity** and **Network activity** are the same except that the latter displays received data (blue) and sent data (red).

4.6.5 ESET SysInspector

ESET SysInspector is an application that thoroughly inspects your computer and gathers detailed information about system components such as installed drivers and applications, network connections or important registry entries and assesses the risk level of each component. This information can help determine the cause of suspicious system behavior that may be due to software or hardware incompatibility or malware infection.

The SysInspector window displays the following information about created logs:

- **Time** – The time of log creation.
- **Comment** – A short comment.
- **User** – The name of the user who created the log.
- **Status** – The status of log creation.

The following actions are available:

- **Compare** – Compares two existing logs.
- **Create...** – Creates a new log. Please wait until the ESET SysInspector log is complete (**Status** shown as Created).
- **Delete** – Removes selected logs from the list.

After right-clicking one or more selected logs, the following options are available from the context menu:

- **Show** – Opens the selected log in ESET SysInspector (same function as double-clicking a log).
- **Delete all** – Deletes all logs.
- **Export...** – Exports the log to an *.xml* file or zipped *.xml*.

4.6.6 ESET Live Grid

ESET Live Grid (the next generation of ESET ThreatSense.Net) is an advanced warning system against emerging threats based on reputation. Utilizing real-time streaming of threat-related information from the cloud, ESET virus lab keeps the defenses up-to-date for a constant level of protection. User can check the reputation of running processes and files directly from the program's interface or contextual menu with additional information available from ESET Live Grid. There are two options:

1. You can decide to not enable the ESET Live Grid. You will not lose any functionality in the software, and you will still receive the best protection that we offer.
2. You can configure the ESET Live Grid to submit anonymous information about new threats and where the new threatening code is contained. This file can be sent to ESET for detailed analysis. Studying these threats will help ESET update its threat detection capabilities.

ESET Live Grid will collect information about your computer related to newly-detected threats. This information may include a sample or copy of the file in which the threat appeared, the path to that file, the filename, the date and time, the process by which the threat appeared on your computer and information about your computer's operating system.

By default, ESET Smart Security is configured to submit suspicious files for detailed analysis to ESET's Virus Lab. Files with certain extensions such as *.doc* or *.xls* are always excluded. You can also add other extensions if there are particular files that you or your organization wants to avoid sending.

The ESET Live Grid's setup menu provides several options for enabling / disabling the ESET Live Grid that serves to submit suspicious files and anonymous statistical information to ESET's labs. It is accessible from the Advanced setup tree by clicking **Tools** > **ESET Live Grid**.

Participate in ESET Live Grid (recommended) – Enables / disables the ESET Live Grid that serves to submit suspicious files and anonymous statistical information to ESET's labs.

Do not submit statistics – Select this option if you do not wish to submit anonymous information from the ESET Live Grid about your computer. This information is related to newly detected threats, which may include the name of the infiltration, information about the date and time it was detected, the version of ESET Smart Security, information about your computer's operating system version and Location settings. The statistics are normally delivered to ESET's server once or twice a day.

Do not submit files – Suspicious files, resembling infiltrations in their content or behavior, are not submitted to ESET for analysis by means of ESET Live Grid technology.

Advanced setup... – Opens a window with further ESET Live Grid settings.

If you have used ESET Live Grid before and have disabled it, there may still be data packages to send. Even after deactivating, such packages will be sent to ESET on the next occasion. Afterwards, no further packages will be created.

4.6.6.1 Suspicious files

The **Files** tab in ESET Live Grid advanced setup allows you to configure how threats are submitted to ESET's Virus Lab for analysis.

If you find a suspicious file, you can submit it for analysis to our ThreatLabs. If it is a malicious application, its detection will be added to the next virus signature update.

Exclusion filter – The Exclusion filter allows you to exclude certain files/folders from submission. The files listed will never be sent to ESET's labs for analysis, even if they contain a suspicious code. For example, it may be useful to exclude files which may carry confidential information, such as documents or spreadsheets. The most common file types are excluded by default (.doc, etc.). You can add to the list of excluded files if desired.

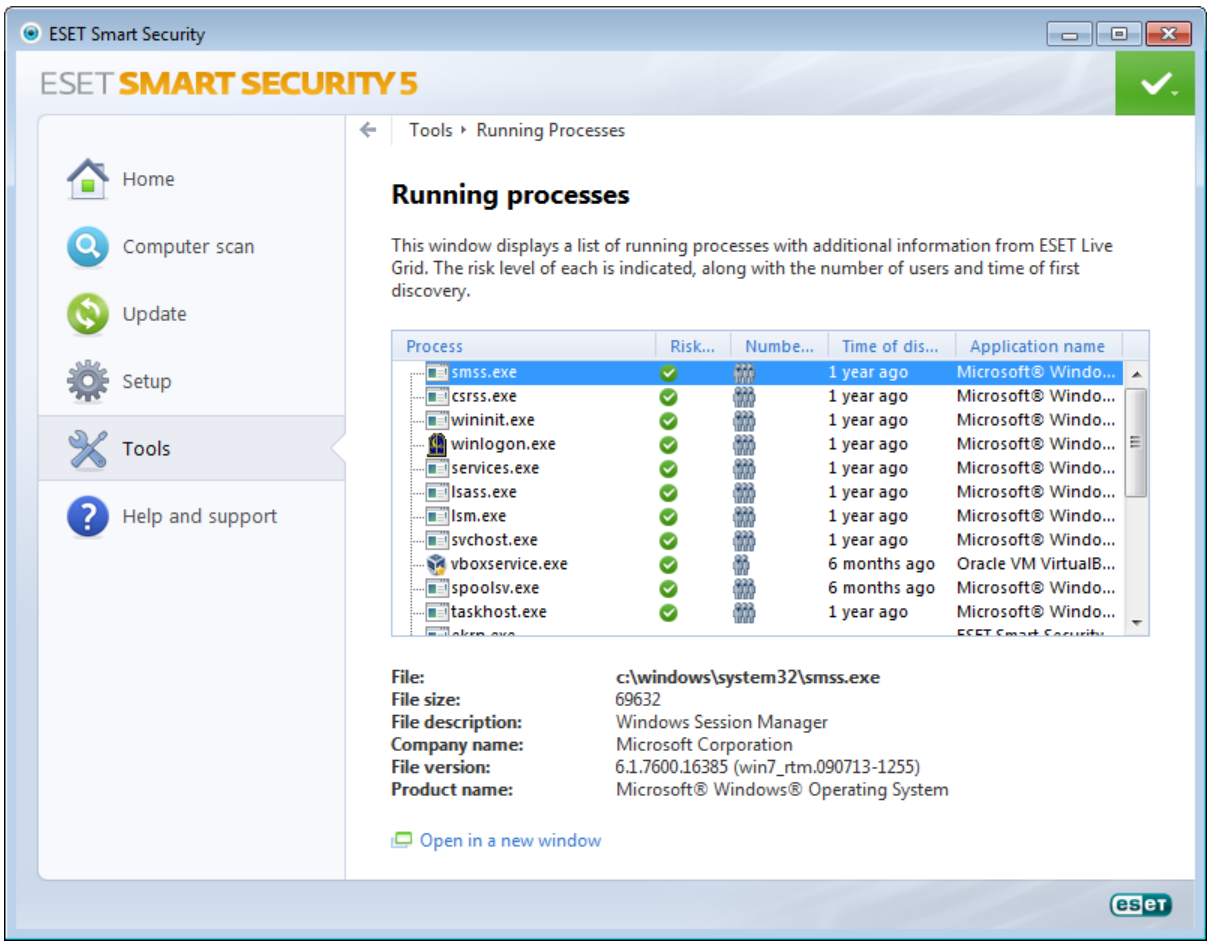
Contact email (optional) – Your contact email can be included with any suspicious files and may be used to contact

you if further information is required for analysis. Please note that you will not receive a response from ESET unless more information is needed.

Select the **Enable logging** option to create an event log to record file and statistical information submissions. It enables logging to the Event log when files or statistics are sent.

4.6.7 Running processes

Running processes displays the running programs or processes on your computer and keeps ESET immediately and continuously informed about new infiltrations. ESET Smart Security provides detailed information on running processes to protect users with ESET Live Grid technology.


ESET Smart Security
ESET SMART SECURITY 5
Home
Computer scan
Update
Setup
Tools
Help and support
Tools › Running Processes
Running processes
This window displays a list of running processes with additional information from ESET Live Grid. The risk level of each is indicated, along with the number of users and time of first discovery.
Process
Risk...
Numbe...
Time of dis...
Application name
smss.exe 1 year ago Microsoft® Windo...
csrss.exe 1 year ago Microsoft® Windo...
wininit.exe 1 year ago Microsoft® Windo...
winlogon.exe 1 year ago Microsoft® Windo...
services.exe 1 year ago Microsoft® Windo...
lsass.exe 1 year ago Microsoft® Windo...
lsm.exe 1 year ago Microsoft® Windo...
svchost.exe 1 year ago Microsoft® Windo...
vboxservice.exe 6 months ago Oracle VM VirtualB...
spoolsv.exe 6 months ago Microsoft® Windo...
taskhost.exe 1 year ago Microsoft® Windo...
File: c:\windows\system32\smss.exe
File size: 69632
File description: Windows Session Manager
Company name: Microsoft Corporation
File version: 6.1.7600.16385 (win7_rtm.090713-1255)
Product name: Microsoft® Windows® Operating System
Open in a new window
eset

Process – Image name of the program or process that is currently running on your computer. You can also use the Windows Task Manager to see all running processes on your computer. You can open Task Manager by right-clicking an empty area on the taskbar and then clicking Task Manager, or by pressing Ctrl+Shift+Esc on your keyboard.

Risk level – In most cases, ESET Smart Security and ESET Live Grid technology assign risk levels to objects (files, processes, registry keys, etc.) using a series of heuristic rules that examine the characteristics of each object and then weigh their potential for malicious activity. Based on these heuristics, objects are assigned a risk level from 1 – Fine (green) to 9 – Risky (red).

NOTE: Known applications marked as Fine (green) are definitely clean (white-listed) and will be excluded from scanning, as this will improve the scanning speed of on-demand computer scan or Real-time file system protection on your computer.

Number of users – The number of users that use a given application. This information is gathered by ESET Live Grid technology.

Time of discovery – Period of time since the application was discovered by ESET Live Grid technology.

NOTE: When an application is marked as Unknown (orange) security level, it is not necessarily malicious software. Usually it is just a newer application. If you are not sure about the file, you can submit file for analysis to ESET's Virus Lab. If the file turns out to be a malicious application, its detection will be added to one of the upcoming updates.

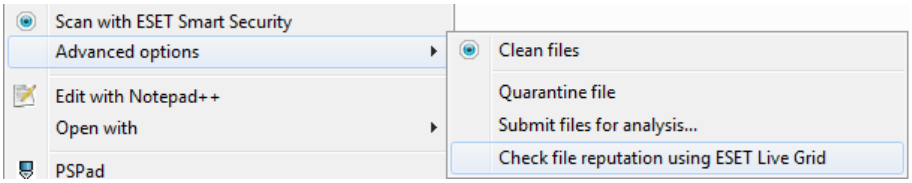
Application name – The given name of a program or process.

Open in a new window – The running processes information will be opened in a new window.

By clicking a given application at the bottom, the following information will appear at the bottom of the window:

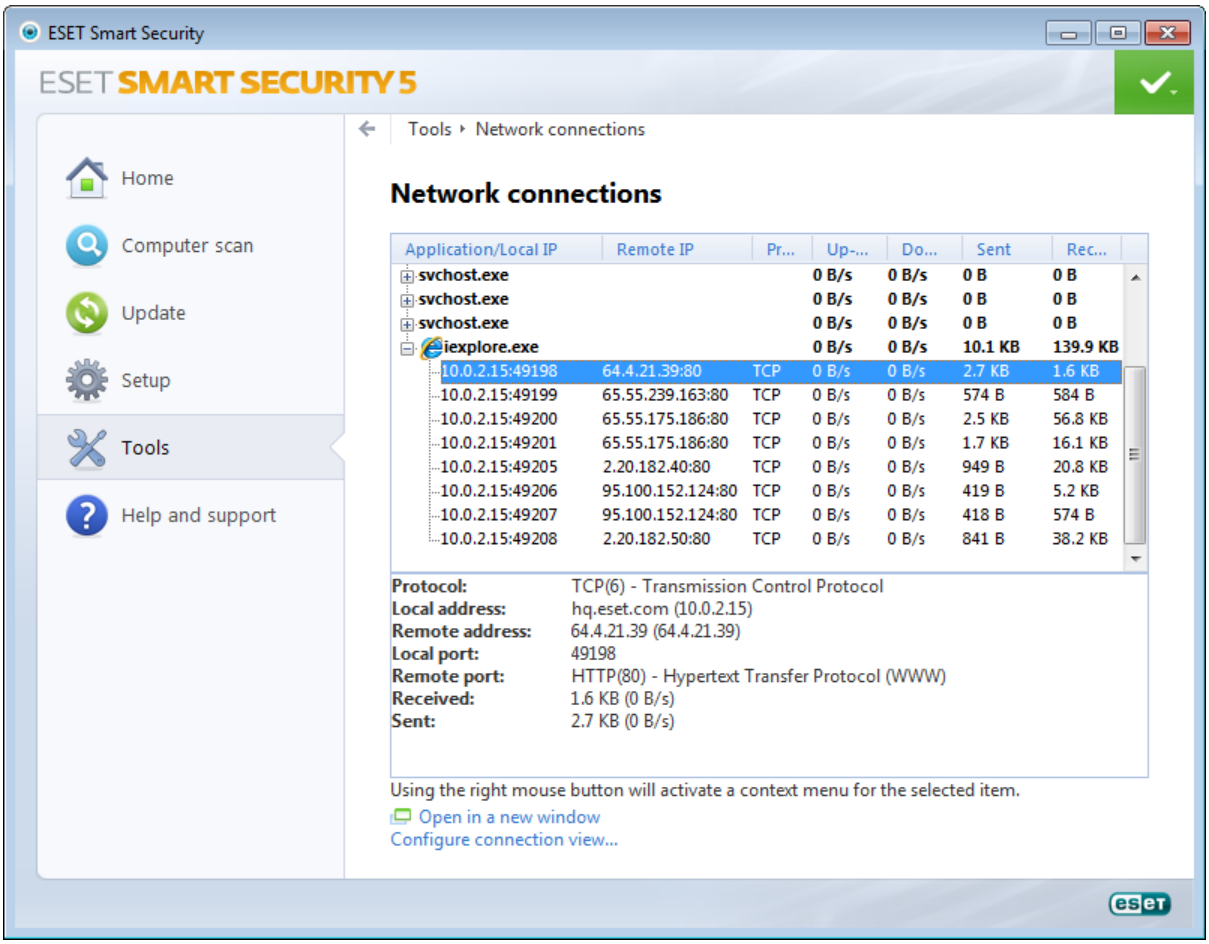
- **File** – Location of an application on your computer.
- **File size** – File size in B (bytes).
- **File description** – File characteristics based on the description from the operating system.
- **Company name** – Name of the vendor or application process.
- **File version** – Information from the application publisher.
- **Product name** – Application name and/or business name.

NOTE: Reputation can also be checked on files that do not act as running programs/processes – mark files you want to check, right-click on them and from the context menu select **Advanced options** > **Check File Reputation using ESET Live Grid**.



4.6.8 Network connections

In the Network connections section, you can see a list of active and pending connections. This helps you control all applications establishing outgoing connections.


ESET Smart Security
ESET SMART SECURITY 5
Home
Computer scan
Update
Setup
Tools
Help and support
Tools ‣ Network connections
Network connections
Application/Local IP
Remote IP
Pr...
Up-...
Do...
Sent
Rec...
svchost.exe 0 B/s 0 B/s 0 B 0 B
svchost.exe 0 B/s 0 B/s 0 B 0 B
svchost.exe 0 B/s 0 B/s 0 B 0 B
iexplore.exe 0 B/s 0 B/s 10.1 KB 139.9 KB
10.0.2.15:49198 64.4.21.39:80 TCP 0 B/s 0 B/s 2.7 KB 1.6 KB
10.0.2.15:49199 65.55.239.163:80 TCP 0 B/s 0 B/s 574 B 584 B
10.0.2.15:49200 65.55.175.186:80 TCP 0 B/s 0 B/s 2.5 KB 56.8 KB
10.0.2.15:49201 65.55.175.186:80 TCP 0 B/s 0 B/s 1.7 KB 16.1 KB
10.0.2.15:49205 2.20.182.40:80 TCP 0 B/s 0 B/s 949 B 20.8 KB
10.0.2.15:49206 95.100.152.124:80 TCP 0 B/s 0 B/s 419 B 5.2 KB
10.0.2.15:49207 95.100.152.124:80 TCP 0 B/s 0 B/s 418 B 574 B
10.0.2.15:49208 2.20.182.50:80 TCP 0 B/s 0 B/s 841 B 38.2 KB
Protocol: TCP(6) - Transmission Control Protocol
Local address: hq.eset.com (10.0.2.15)
Remote address: 64.4.21.39 (64.4.21.39)
Local port: 49198
Remote port: HTTP(80) - Hypertext Transfer Protocol (WWW)
Received: 1.6 KB (0 B/s)
Sent: 2.7 KB (0 B/s)
Using the right mouse button will activate a context menu for the selected item.
Open in a new window
Configure connection view...
eset

The first line displays the name of the application and its data transfer speed. To see the list of connections made by the application (and also more detailed information), click **+**.

Application/Local IP – Name of application, local IP addresses and communication ports.

Remote IP – IP address and port number of the particular remote computer.

Protocol – Transfer protocol used.

Up-Speed/Down-Speed – The current speed of outgoing and incoming data.

Sent/Received – Amount of data exchanged within the connection.

Open in a new window – Displays information in a separate window.

The **Configure connection view...** option in the Network connections screen enters the advanced setup structure for this section, enabling you to modify connection view options:

Resolve host names – If possible, all network addresses are displayed in DNS format, not in the numeral IP address format.

Only show TCP protocol connections – The list only displays connections which belong to the TCP protocol suite.

Show connections with open ports on which the computer is listening – Select this option to only display connections, where no communication is currently established, but the system has opened a port and is waiting for a connection.

Also show connection within the computer – Select this option to only show connections, where the remote side is a local system – so-called *localhost* connections.

Right-click on a connection to see additional options that include:

Deny communication for the connection – Terminates the established communication. This option is available only after clicking on an active connection.

Show details – Choose this option to display detailed information about the selected connection.

Refresh speed – Choose the frequency to refresh the active connections.

Refresh now – Reloads the Network connections window.

The following options are available only after clicking on an application or process, not an active connection:

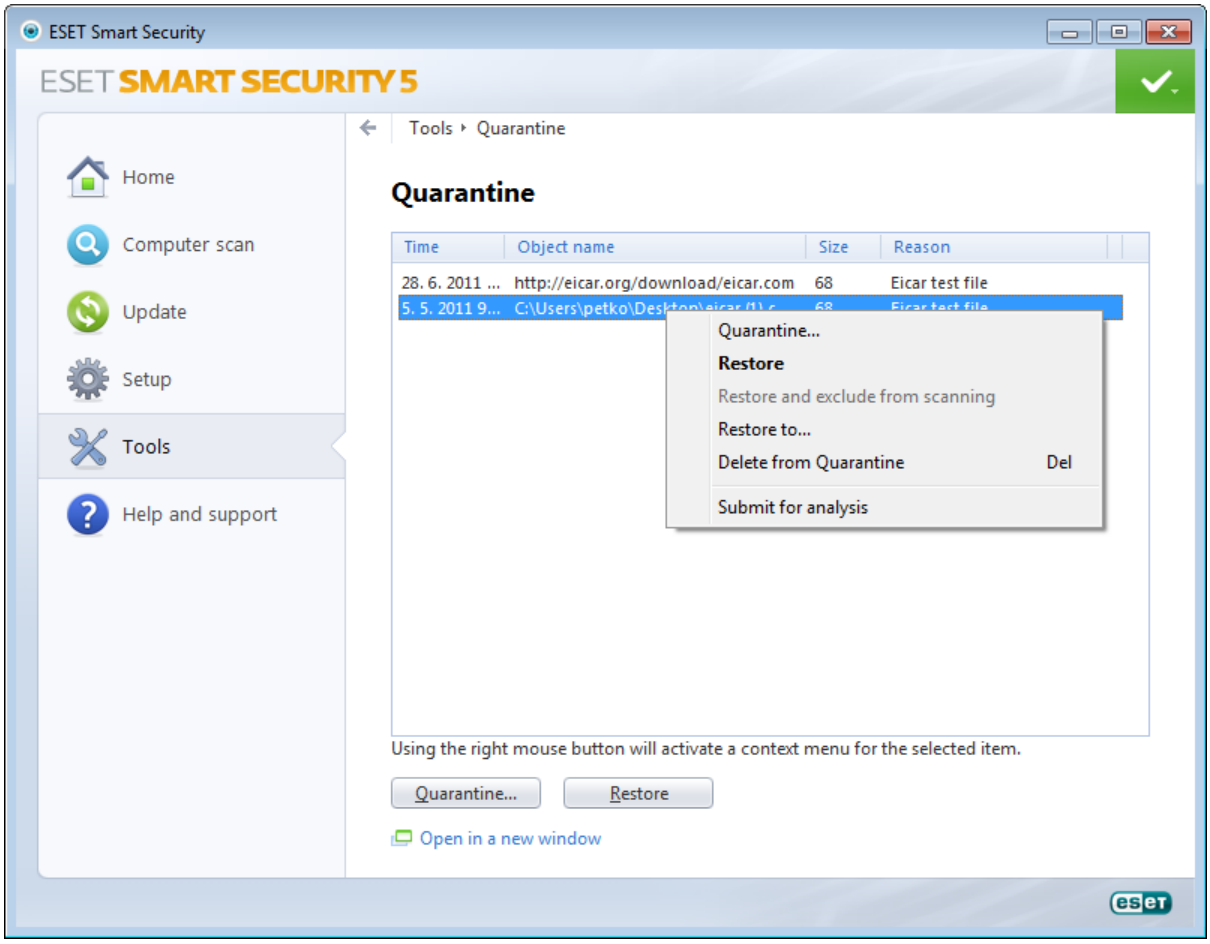
Temporarily deny communication for the process – Rejects current connections of the given application. If a new connection is established, the firewall uses a predefined rule. A description of the settings can be found in the Rules and zones section.

Temporarily allow communication for the process – Permits current connections of the given application. If a new connection is established, the firewall uses a predefined rule. A description of the settings can be found in the Rules and zones section.

4.6.9 Quarantine

The main function of the quarantine is to safely store infected files. Files should be quarantined if they cannot be cleaned, if it is not safe or advisable to delete them or if they are being falsely detected by ESET Smart Security.

You can choose to quarantine any file. This is advisable if a file behaves suspiciously but is not detected by the antivirus scanner. Quarantined files can be submitted for analysis to ESET's Virus Lab.



Files stored in the quarantine folder can be viewed in a table which displays the date and time of quarantine, the path to the original location of the infected file, its size in bytes, reason (for example, object added by user), and number of threats (for example, if it is an archive containing multiple infiltrations).

Quarantining files

ESET Smart Security automatically quarantines deleted files (if you have not canceled this option in the alert window). If desired, you can quarantine any suspicious file manually by clicking **Quarantine...**. If this is the case, the original file will not be removed from its original location. The context menu can also be used for this purpose; right-click in the **Quarantine** window and select **Quarantine...**.

Restoring from Quarantine

Quarantined files can also be restored to their original location. Use the **Restore** feature for this purpose, which is available from the context menu by right-clicking on the given file in the Quarantine window. If a file is marked as Potentially unwanted application, the **Restore and exclude from scanning** option is enabled. Read more about this type of application in the glossary. The context menu also offers the **Restore to...** option which allows you to restore a file to a location other than the one from which it was deleted.

NOTE: If the program quarantined a harmless file by mistake, please exclude the file from scanning after restoring and send the file to ESET Customer Care.

Submitting a file from the Quarantine

If you have quarantined a suspicious file that was not detected by the program, or if a file was determined to be infected incorrectly (for example, by heuristic analysis of the code) and subsequently quarantined, please send the file to ESET's Virus Lab. To submit a file from quarantine, right-click the file and select **Submit for analysis** from the context menu.

4.6.10 Submission of files for analysis

The file submission dialog enables you to send a file to ESET for analysis and can be found in **Tools** > **Submit file for analysis**. If you find a suspiciously behaving file on your computer, you can submit it to ESET's Virus Lab for analysis. If the file turns out to be a malicious application, its detection will be added to one of the upcoming updates.

Alternatively, you can submit the file by email. If you prefer this option, pack the file(s) using WinRAR/ZIP, protect the archive with the password "infected" and send it to samples@eset.com. Please remember to use a descriptive subject and enclose as much information about the file as possible (e.g., the website you downloaded it from).

NOTE: Before submitting a file to ESET, make sure it meets one or more of the following criteria:
- the file is not detected at all,
- the file is incorrectly detected as a threat.

You will not receive a response unless further information is required for analysis.

Select the description from the **Reason for submitting the file** drop-down menu that best fits your message:
- **Suspicious file**,
- **False positive** (file that is detected as an infection but are not infected),
- and **Other**.

File – The path to the file you intend to submit.

Contact email – This contact email is sent along with suspicious files to ESET and may be used to contact you if further information is required for analysis. Entering a contact email is optional. You will not get a response from ESET unless more information is required, since each day our servers receive tens of thousands of files, which makes it impossible to reply to all submissions.

4.6.11 System updates

The Windows update feature is an important component of protecting users from malicious software. For this reason, it is vital to install Microsoft Windows updates as soon as they become available. ESET Smart Security notifies you about missing updates according to the level you specify. The following levels are available:

- **No updates** – No system updates will be offered for download.
- **Optional updates** – Updates marked as low priority and higher will be offered for download.
- **Recommended updates** – Updates marked as common and higher will be offered for download.
- **Important updates** – Updates marked as important and higher will be offered for download.
- **Critical updates** – Only critical updates will be offered for download.

Click **OK** to save changes. The System updates window will be displayed after status verification with the update server. Accordingly, the system update information may not be immediately available after saving changes.

4.6.12 Diagnostics

Diagnostics provides application crash dumps of ESET's processes (e.g. *ekrn*). If an application crashes, a dump will be generated. This can help developers to debug and fix various ESET Smart Security problems. Two dump types are available:

- **Complete memory dump** – Records all the contents of system memory when application stops unexpectedly. A complete memory dump may contain data from processes that were running when the memory dump was collected.
- **Minidump** – Records the smallest set of useful information that may help identify why the application crashed unexpectedly. This kind of dump file can be useful when space is limited. However, because of the limited information included, errors that were not directly caused by the thread that was running at the time of the problem may not be discovered by an analysis of this file.
- Select **Do not generate memory dump** (default) to disable this feature.

Target directory – Directory where the dump during the crash will be generated. Click **Open folder...** to open this directory within a new *Windows explorer* window.

4.7 User interface

The **User interface** section allows you to configure the behavior of the program's Graphical user interface (GUI).

Using the Graphics tool, you can adjust the program's visual appearance and effects used.

By configuring Alerts and notifications, you can change the behavior of detected threat alerts and system notifications. These can be customized to fit your needs.

If you choose not to display some notifications, they will be displayed in the Hidden notification windows area. Here you can check their status, show more details or remove them from this window.

To provide maximum security of your security software, you can prevent any unauthorized changes by protecting the settings by a password using the Access setup tool.

The Context menu is displayed after right-clicking on the selected object. Use this tool to integrate the ESET Smart Security control elements into the context menu.

Gamer mode is useful for users, who want to work with an application, and not be interrupted by pop-up windows, scheduled tasks and any components that could load the processor and RAM.

4.7.1 Graphics

User interface configuration options in ESET Smart Security allow you to adjust the working environment to fit your needs. These configuration options are accessible in the **User interface** > **Graphics** branch of the ESET Smart Security Advanced setup tree.

In the **User interface elements** section, the **Graphical user interface** option should be disabled if the graphical elements slow the performance of your computer or cause other problems. The graphical interface may also need to be turned off for visually impaired users, as it may conflict with special applications that are used for reading text displayed on the screen.

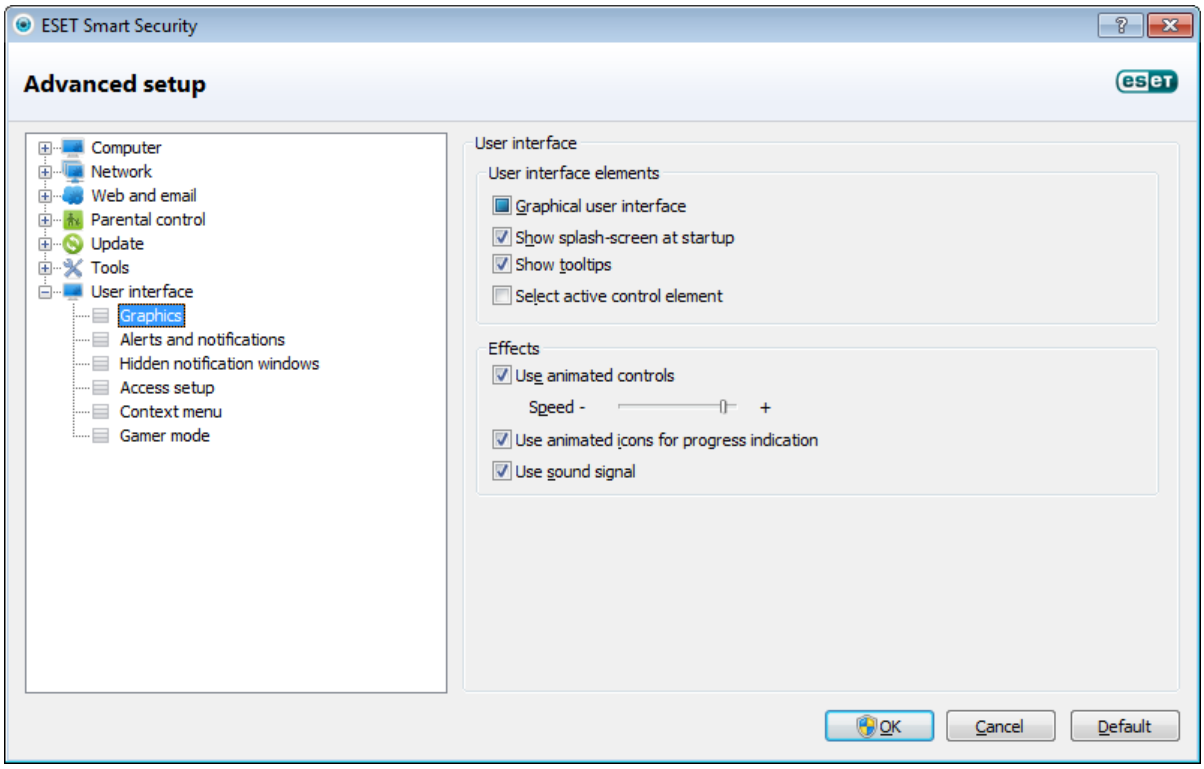
If you wish to deactivate the ESET Smart Security splash-screen, deselect the **Show splash-screen at startup** option.

If the **Show tooltips** option is enabled, a short description of any option will be displayed when the cursor is placed over an option. The **Select active control element** option will cause the system to highlight any element which is currently under the active area of the mouse cursor. The highlighted element will be activated after a mouse click.

To decrease or increase the speed of animated effects, select the **Use animated controls** option and move the **Speed** slider bar to the left or right.

To enable the use of animated icons to display the progress of various operations, select the **Use animated icons for progress indication** option.

If you want to have ESET Smart Security play a sound when important events occur during a scan, for example when a threat is discovered or when the scan has finished, select **Use sound signal**.



4.7.2 Alerts and notifications

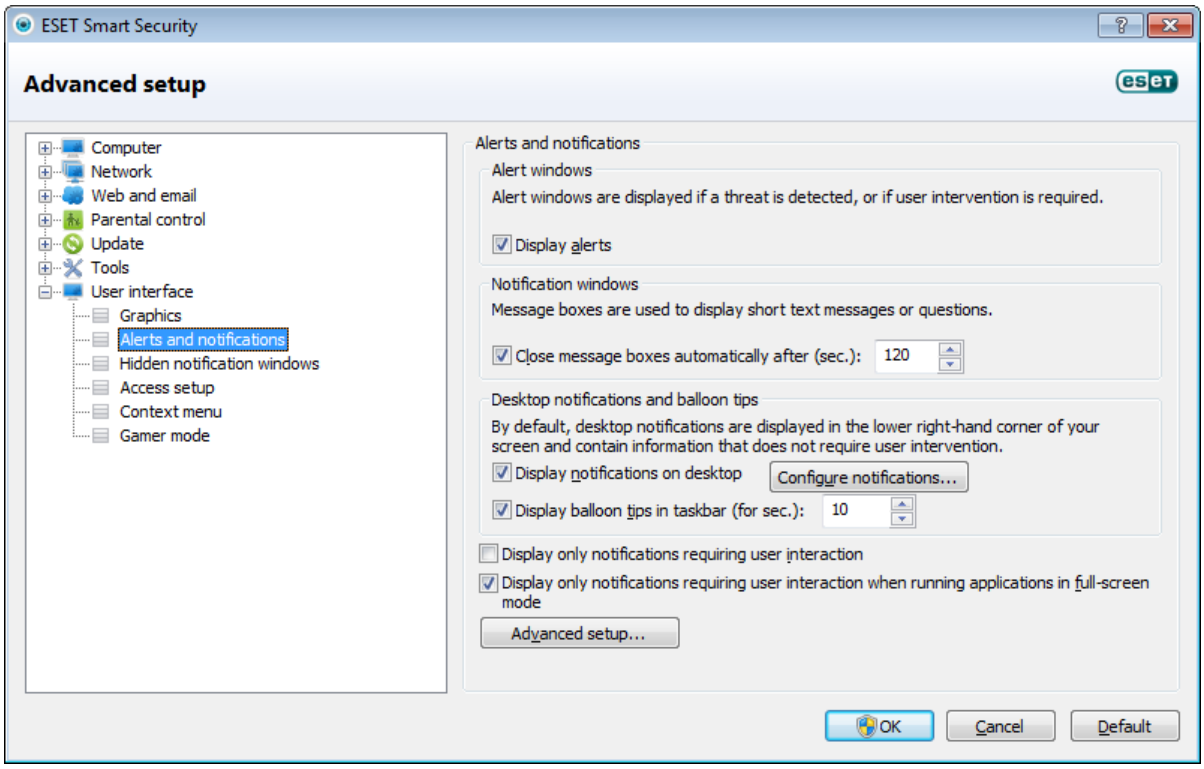
The **Alerts and notifications** section under **User interface** allows you to configure how threat alerts and system notifications (e.g. successful update messages) are handled by ESET Smart Security. You can also set display time and the level of transparency of system tray notifications (it applies only to the systems supporting system tray notifications).

The first item is **Display alerts**. Disabling this option will cancel all alert windows and is only suitable for a limited amount of specific situations. For most users, we recommend that this option be left to its default setting (enabled).

To close pop-up windows automatically after a certain period of time, select the **Close messageboxes automatically after (sec.)** option. If they are not closed manually, alert windows are automatically closed after the specified time period elapses.

Notifications on the Desktop and balloon tips are informative only, and do not require or offer user interaction. They are displayed in the notification area at the bottom right corner of the screen. To activate Desktop notifications, select the **Display notifications on desktop** option. More detailed options, such as notification display time and window transparency can be modified by clicking the **Configure notifications...** button. To preview the behavior of notifications, click the **Preview** button.

To configure the duration of the balloon tips display time, see the **Display balloon tips in taskbar (for sec.)** option and enter your desired interval into the adjacent field.


ESET Smart Security
Advanced setup
Computer
Network
Web and email
Parental control
Update
Tools
User interface
Graphics
Alerts and notifications
Hidden notification windows
Access setup
Context menu
Gamer mode
Alerts and notifications
Alert windows
Alert windows are displayed if a threat is detected, or if user intervention is required.
Display alerts
Notification windows
Message boxes are used to display short text messages or questions.
Close message boxes automatically after (sec.): 120
Desktop notifications and balloon tips
By default, desktop notifications are displayed in the lower right-hand corner of your screen and contain information that does not require user intervention.
Display notifications on desktop
Configure notifications...
Display balloon tips in taskbar (for sec.): 10
Display only notifications requiring user interaction
Display only notifications requiring user interaction when running applications in full-screen mode
Advanced setup...
OK
Cancel
Default

The **Display only notifications requiring user's interaction** option allows you to toggle alerts and notifications that require no user interaction. Select **Display only notifications requiring user's interaction when running applications in full screen mode** to suppress all non-interactive notifications.

Click **Advanced setup...** to enter additional **Alerts and notification** setup options.

4.7.2.1 Advanced setup

From the **Minimum verbosity of events to display** drop-down menu, you can select the starting severity level of alerts and notification to be displayed.

- **Diagnostic** – Logs information needed to fine-tune the program and all records above.
- **Informative** – Records informative messages, including successful update messages, plus all records above.
- **Warnings** – Records critical errors and warning messages.
- **Errors** – Errors such as *"Error downloading file"* and critical errors will be recorded.
- **Critical** – Logs only critical errors (error starting Antivirus protection, Personal firewall, etc...).

The last feature in this section allows you to configure the destination of notifications in a multi-user environment. The **On multi-user systems, display notifications on the screen of this user** field specifies a user who will receive system and other notifications on systems allowing multiple users to connect at the same time. Normally, this would be a system or network administrator. This option is especially useful for terminal servers, provided that all system notifications are sent to the administrator.

4.7.3 Hidden notification windows

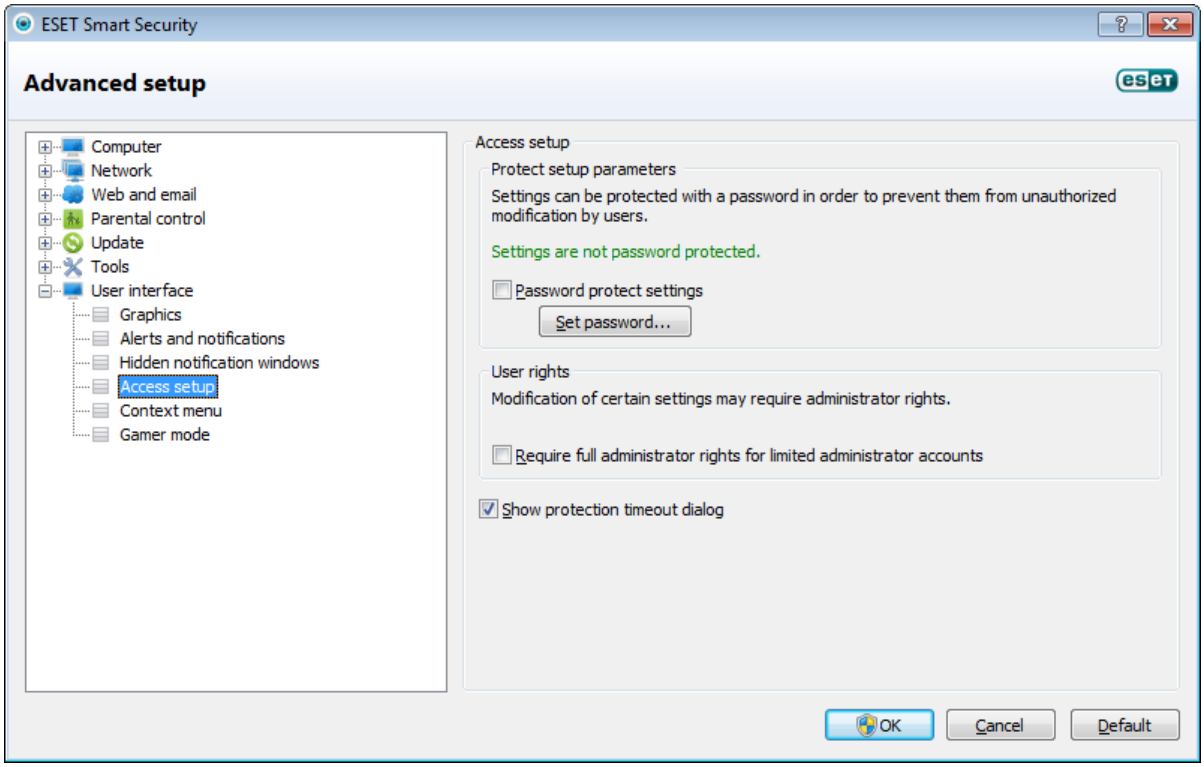
If the **Do not show this message again** option was selected for any notification window (alert) which was previously displayed, it will appear in the list of hidden notification windows. Actions that are now executed automatically are displayed in the column titled **Confirm**.

Show – Shows a preview of notification windows that are currently not displayed and for which an automatic action is configured.

Remove – Removes items from the **Hidden messageboxes** list. All notification windows removed from the list will be displayed again.

4.7.4 Access setup

In order to provide maximum security for your system, it is essential for ESET Smart Security to be correctly configured. Any unqualified change may result in a loss of important data. This option is located in the **Access setup** submenu under **User interface** in the Advanced setup tree. To avoid unauthorized modifications, the setup parameters of ESET Smart Security can be password protected.



Password protect settings – Locks/unlocks the program's setup parameters. Check or uncheck the checkbox to open the Password setup window.

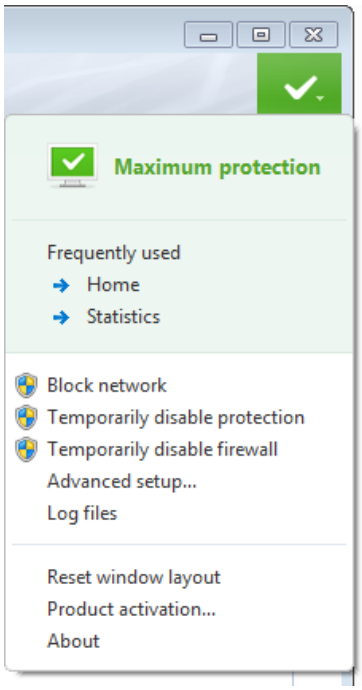
To set or change a password to protect setup parameters, click **Set password...**.

Require full administrator rights for limited administrator accounts – Select this option to prompt the current user (if he or she does not have administrator rights) to enter administrator username and password when modifying certain system parameters (similar to the UAC in Windows Vista). The modifications include disabling protection modules or turning off the firewall.

Show protection timeout dialog – You will be prompted if this option is selected while temporarily disabling the protection from the program menu or via **ESET Smart Security** > **Setup** section. A **Time interval** drop-down menu in **Temporarily disable protection** window represents the period of time all selected parts of protection will be disabled.

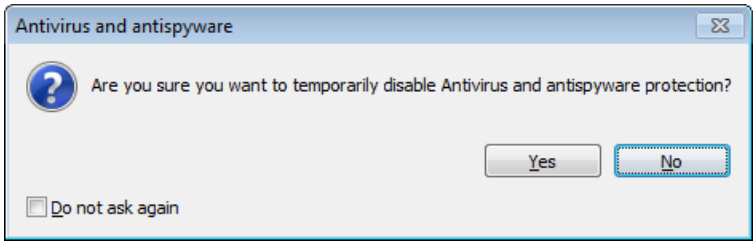
4.7.5 Program menu

Some of the most important setup options and features are available in the main program menu.

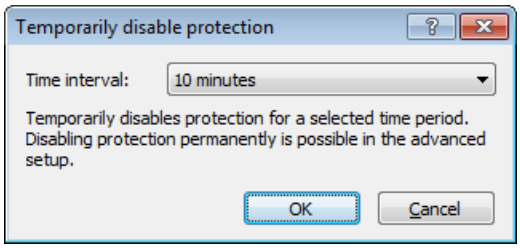


Frequently used – Displays the most frequently used parts of ESET Smart Security. You can quickly access these from the program menu.

Temporarily disable protection – Displays the confirmation dialog box that disables Antivirus and antispyware protection, which guards against malicious system attacks by controlling file, web and email communication. Select the **Do not ask again** checkbox to avoid this message in the future.


Antivirus and antispyware
Are you sure you want to temporarily disable Antivirus and antispyware protection?
Yes
No
Do not ask again

The **Time interval** drop-down menu represents the period of time that Antivirus and antispyware protection will be disabled for.



Block network – Personal firewall will block all outgoing / incoming network and internet traffic.

Temporarily disable firewall – Switches the firewall to an inactive state. See chapter System integration of Personal firewall for more information.

Advanced setup... – Select this option to enter the **Advanced setup** tree. There are also other ways to open it, such as pressing the F5 key or navigating to **Setup** > **Enter advanced setup...**.

Log files – Log files contain information about all important program events that have occurred and provide an overview of detected threats.

Reset window layout – Resets the ESET Smart Security's window to its default size and position on the screen.

Product activation... – Select this option to activate your ESET security product.

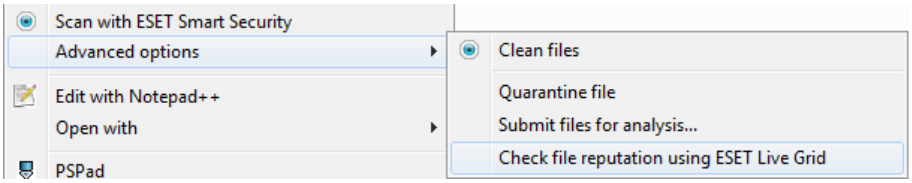
About – Provides system information, details about the installed version of ESET Smart Security and the installed program modules. Here, you can also find the license expiration date. At the bottom, you can find information about the operating system and system resources.

4.7.6 Context menu

The context menu is displayed after right-clicking on the selected object. The menu lists all options available to perform on the object.

It is possible to integrate ESET Smart Security control elements into the context menu. More detailed setup options for this functionality are available in the Advanced setup tree under **User Interface** > **Context menu**.

Integrate into the context menu – Integrate the ESET Smart Security control elements into the context menu.



The following options are available in the **Menu type** drop-down menu:

- **Full (scan first)** – Activates all context menu options; the main menu will display the **Scan with ESET Smart Security** option.
- **Full (clean first)** – Activates all context menu options; the main menu will display the **Clean with ESET Smart Security** option.
- **Only scan** – Only the **Scan with ESET Smart Security** option will be displayed in the context menu.
- **Only clean** – Only the **Clean with ESET Smart Security** option will be displayed in the context menu.

4.7.7 Gamer mode

Gamer mode is a feature for users that demand uninterrupted usage of their software, do not wish to be disturbed by pop-up windows and want to minimize CPU usage. Gamer mode can also be used during presentations that cannot be interrupted by antivirus activity. By enabling this feature, all pop-up windows are disabled and the activity of the scheduler will be completely stopped. System protection still runs in the background but does not demand any user interaction.

You can enable or disable Gamer mode in the main program window by clicking **Setup** > **Computer** then **Enable** under **Gamer mode**; or you can enable Gamer mode in the Advanced setup tree (F5) by expanding **User interface**, clicking **Gamer mode** and selecting the checkbox next to **Enable Gamer mode**. Enabling Gamer mode is a potential security risk, so the protection status icon in the taskbar will turn orange and display a warning. You will also see this warning in the main program window where you will see Gamer mode enabled in orange.

By selecting the **Enable Gamer mode when running applications in full screen automatically** checkbox, Gamer mode will start after you start a full-screen application and will automatically stop after you exit the application. This is especially useful for starting Gamer mode directly after starting a game, opening a full screen application or starting a presentation.

You can also select the **Disable Gamer mode automatically after X minutes** checkbox to define the amount of time (default value is 1 minute). This is used if you only require Gamer mode for a specific amount of time and want to automatically disable it afterwards.

NOTE: If the Personal firewall is in Interactive mode and Gamer mode is enabled, you might have trouble connecting to the Internet. This can be problematic if you start a game that connects to the Internet. Normally, you would be asked to confirm such an action (if no communication rules or exceptions have been defined), but user interaction is disabled in Gamer mode. The solution is to define a communication rule for every application that might be in conflict with this behavior or to use a different Filtering mode in the Personal firewall. Also keep in mind that if Gamer mode is enabled and you go to a webpage or an application that might be a security risk, it may be blocked but you will not see any explanation or warning because user interaction is disabled.

5. Advanced user

5.1 Proxy server setup

In large LAN networks, the connection of your computer to the Internet can be mediated by a proxy server. If this is the case, the following settings need to be defined. Otherwise the program will not be able to update itself automatically. In ESET Smart Security, proxy server setup is available in two different sections within the Advanced setup tree.

First, proxy server settings can be configured in **Advanced setup** under **Tools** > **Proxy server**. Specifying the proxy server at this level defines global proxy server settings for all of ESET Smart Security. Parameters here will be used by all modules requiring connection to the Internet.

To specify proxy server settings for this level, select the **Use proxy server** checkbox and then enter the address of the proxy server into the **Proxy server** field, along with the **Port** number of the proxy server.

If communication with the proxy server requires authentication, select the **Proxy server requires authentication** checkbox and enter a valid **Username** and **Password** into the respective fields. Click the **Detect proxy server** button to automatically detect and populate proxy server settings. The parameters specified in Internet Explorer will be copied.

NOTE: This feature does not retrieve authentication data (username and password); it must be supplied by you.

Proxy server settings can also be established within Advanced update setup (**Update** branch of the **Advanced setup** tree). This setting applies for the given update profile and is recommended for laptops that often receive virus signature updates from different locations. For more information about this setting, see section Advanced update setup.

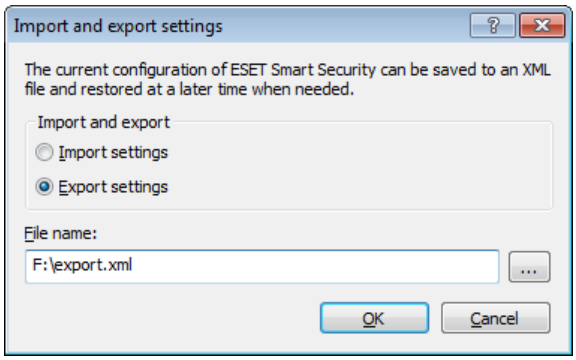
5.2 Import and export settings

Importing and exporting configurations of ESET Smart Security is available under **Setup**.

Both import and export use the *.xml* file type. Import and export are useful if you need to backup the current configuration of ESET Smart Security to be able to use it later. The export settings option is also convenient for users who wish to use their preferred configuration of ESET Smart Security on multiple systems – they can easily import an *.xml* file to transfer the desired settings.

Importing a configuration is very easy. In the main program window, click **Setup** > **Import and export settings...**, and then select the **Import settings** option. Enter the path to the configuration file or click the **...** button to browse for the configuration file you wish to import.

The steps to export a configuration are very similar. In the main program window, click **Setup** > **Import and export settings...**. Select the **Export settings** option and enter the **File name** of the configuration file (i.e. *export.xml*). Use the browser to select a location on your computer to save the configuration file.



5.3 Keyboard shortcuts

Key shortcuts that can be used when working with the ESET Smart Security include:

Ctrl+G	disables GUI in the product
Ctrl+I	opens the ESET SysInspector page
Ctrl+L	opens the Log files page
Ctrl+S	opens the Scheduler page
Ctrl+Q	opens the Quarantine page
Ctrl+U	opens a dialog window where Username and Password can be set
Ctrl+R	resets window to its default size and position on the screen

For better navigation in the ESET security product, the following keyboard shortcuts can be used:

F1	opens help pages
F5	opens the Advanced setup
Up/Down	navigation in product through items
*	expands the Advanced setup tree node
-	collapses the Advanced setup tree node
TAB	moves the cursor in a window
Esc	closes the active dialog window

5.4 Command Line

ESET Smart Security's antivirus module can be launched via the command line – manually (with the "ecls" command) or with a batch ("bat") file. ESET Command-line scanner usage:

```
ecls [OPTIONS..] FILES..
```

The following parameters and switches can be used while running the on-demand scanner from the command line:

Options

/base-dir=FOLDER	load modules from FOLDER
/quar-dir=FOLDER	quarantine FOLDER
/exclude=MASK	exclude files matching MASK from scanning
/subdir	scan subfolders (default)
/no-subdir	do not scan subfolders
/max-subdir-level=LEVEL	maximum sub-level of folders within folders to scan
/symlink	follow symbolic links (default)
/no-symlink	skip symbolic links
/ads	scan ADS (default)
/no-ads	do not scan ADS
/log-file=FILE	log output to FILE
/log-rewrite	overwrite output file (default – append)
/log-console	log output to console (default)
/no-log-console	do not log output to console
/log-all	also log clean files
/no-log-all	do not log clean files (default)
/aind	show activity indicator
/auto	scan and automatically clean all local disks

Scanner options

/files	scan files (default)
/no-files	do not scan files
/memory	scan memory
/boots	scan boot sectors
/no-boots	do not scan boot sectors (default)
/arch	scan archives (default)
/no-arch	do not scan archives
/max-obj-size=SIZE	only scan files smaller than SIZE megabytes (default 0 = unlimited)
/max-arch-level=LEVEL	maximum sub-level of archives within archives (nested archives) to scan
/scan-timeout=LIMIT	scan archives for LIMIT seconds at maximum
/max-arch-size=SIZE	only scan the files in an archive if they are smaller than SIZE (default 0 = unlimited)

/max-sfx-size=SIZE	only scan the files in a self-extracting archive if they are smaller than SIZE megabytes (default 0 = unlimited)
/mail	scan email files (default)
/no-mail	do not scan email files
/mailbox	scan mailboxes (default)
/no-mailbox	do not scan mailboxes
/sfx	scan self-extracting archives (default)
/no-sfx	do not scan self-extracting archives
/rtp	scan runtime packers (default)
/no-rtp	do not scan runtime packers
/adware	scan for Adware/Spyware/Riskware (default)
/no-adware	do not scan for Adware/Spyware/Riskware
/unsafe	scan for potentially unsafe applications
/no-unsafe	do not scan for potentially unsafe applications (default)
/unwanted	scan for potentially unwanted applications
/no-unwanted	do not scan for potentially unwanted applications (default)
/pattern	use signatures (default)
/no-pattern	do not use signatures
/heur	enable heuristics (default)
/no-heur	disable heuristics
/adv-heur	enable Advanced heuristics (default)
/no-adv-heur	disable Advanced heuristics
/ext=EXTENSIONS	scan only EXTENSIONS delimited by colon
/ext-exclude=EXTENSIONS	exclude EXTENSIONS delimited by colon from scanning
/clean-mode=MODE	use cleaning MODE for infected objects. Available options: none, standard (default), strict, rigorous, delete
/quarantine	copy infected files (if cleaned) to Quarantine (supplements the action carried out while cleaning)
/no-quarantine	do not copy infected files to Quarantine

General options

/help	show help and quit
/version	show version information and quit
/preserve-time	preserve last access timestamp

Exit codes

0	no threat found
1	threat found and cleaned
10	some files could not be scanned (may be threats)
50	threat found
100	error

NOTE: Exit codes greater than 100 mean that the file was not scanned and thus can be infected.

5.5 ESET SysInspector

5.5.1 Introduction to ESET SysInspector

ESET SysInspector is an application that thoroughly inspects your computer and displays gathered data in a comprehensive way. Information like installed drivers and applications, network connections or important registry entries can help you to investigate suspicious system behavior be it due to software or hardware incompatibility or malware infection.

You can access ESET SysInspector two ways: From the integrated version in ESET Security solutions or by downloading the standalone version (SysInspector.exe) for free from ESET's website. Both versions are identical in function and have the same program controls. The only difference is how outputs are managed. The standalone and integrated versions each allow you to export system snapshots to an *.xml* file and save them to disk. However, the integrated version also allows you to store your system snapshots directly in **Tools** > **ESET SysInspector** (except ESET Remote Administrator). For more information see section ESET SysInspector as part of ESET Smart Security.

Please allow some time while ESET SysInspector scans your computer. It may take anywhere from 10 seconds up to a few minutes depending on your hardware configuration, operating system and the number of applications installed on your computer.

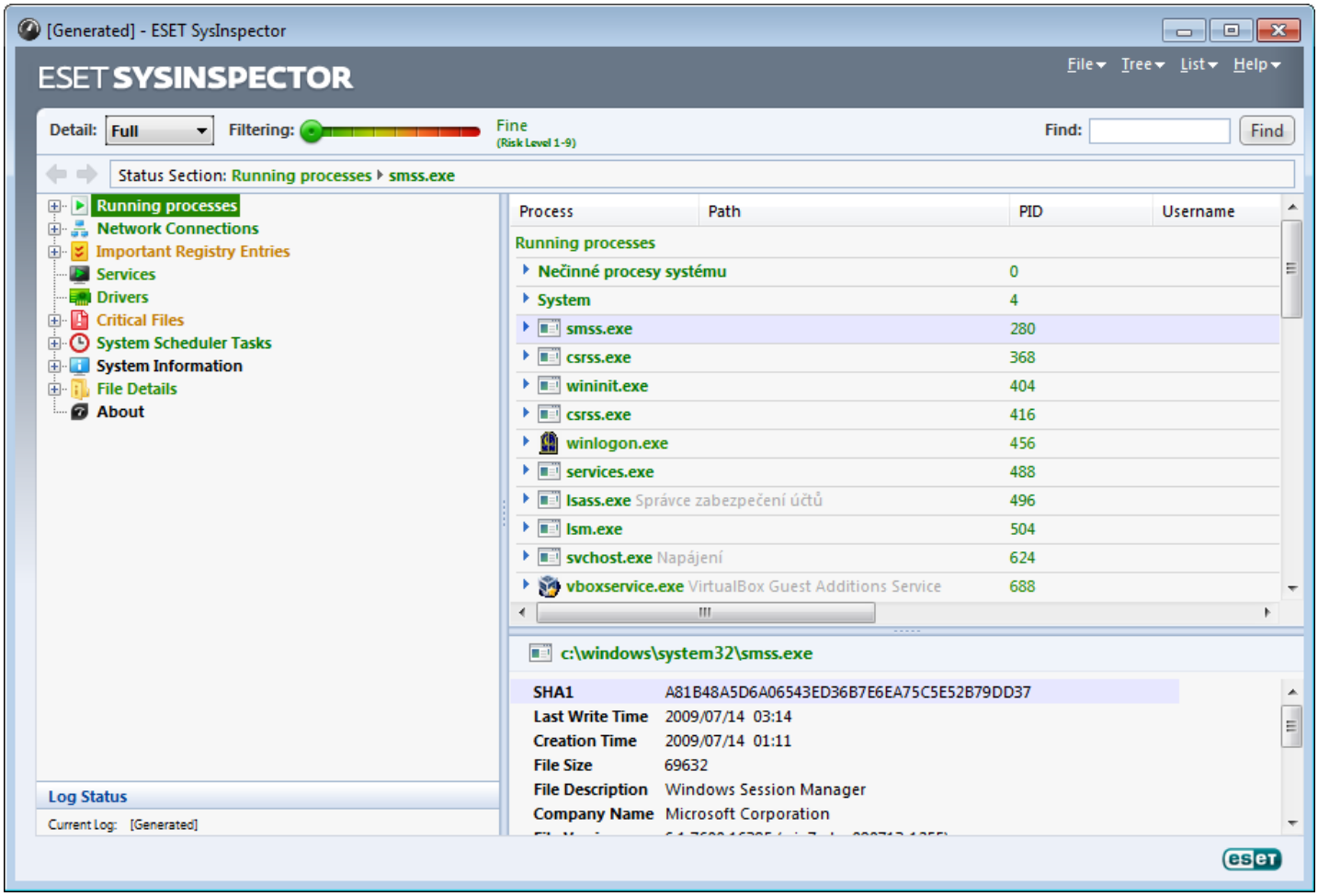
5.5.1.1 Starting ESET SysInspector

To start ESET SysInspector, simply run the *SysInspector.exe* executable you downloaded from ESET's website. If you already have one of the ESET Security solutions installed, you can run ESET SysInspector directly from the Start Menu (**Programs** > **ESET** > **ESET Smart Security**).

Please wait while the application inspects your system, which could take up to several minutes depending on your hardware and data to be gathered.

5.5.2 User Interface and application usage

For clarity the Main window is divided into four major sections – Program Controls located on the top of the Main window, the Navigation window on the left, the Description window on the right in the middle and the Details window on the right at the bottom of the Main window. The Log Status section lists the basic parameters of a log (filter used, filter type, is the log a result of a comparison etc.).



5.5.2.1 Program Controls

This section contains the description of all program controls available in ESET SysInspector.

File

By clicking **File** you can store your current system status for later investigation or open a previously stored log. For publishing purposes we recommend that you generate a log **Suitable for sending**. In this form, the log omits sensitive information (current user name, computer name, domain name, current user privileges, environment variables, etc.).

NOTE: You may open previously stored ESET SysInspector reports by simply dragging and dropping them into the Main window.

Tree

Enables you to expand or close all nodes and export selected sections to Service script.

List

Contains functions for easier navigation within the program and various other functions like finding information online.

Help

Contains information about the application and its functions.

Detail

This setting influences the information displayed in the Main window to make the information easier to work with. In "Basic" mode, you have access to information used to find solutions for common problems in your system. In the "Medium" mode, the program displays less used details. In "Full" mode, ESET SysInspector displays all the information needed to solve very specific problems.

Item filtering

Item filtering is best used to find suspicious files or registry entries in your system. By adjusting the slider, you can filter items by their Risk Level. If the slider is set all the way to the left (Risk Level 1), then all items are displayed. By moving the slider to the right, the program filters out all items less risky than current Risk Level and only display items which are more suspicious than the displayed level. With the slider all the way to the right, the program displays only known harmful items.

All items labeled as risk 6 to 9 can pose security risk. If you are not using a security solution from ESET, we recommend that you scan your system with ESET Online Scanner if ESET SysInspector has found any such item. ESET Online Scanner is a free service.

NOTE: The Risk level of an item can be quickly determined by comparing the color of the item with the color on the Risk Level slider.

Search

Search can be used to quickly find a specific item by its name or part of its name. The results of the search request are displayed in the Description window.

Return

By clicking the back or forward arrow, you may return to previously displayed information in the Description window. You may use the backspace and space keys instead of clicking back and forward.

Status section

Displays the current node in Navigation window.

Important: Items highlighted in red are unknown, which is why the program marks them as potentially dangerous. If an item is in red, it does not automatically mean that you can delete the file. Before deleting, please make sure that files are really dangerous or unnecessary.

5.5.2.2 Navigating in ESET SysInspector

ESET SysInspector divides various types of information into several basic sections called nodes. If available, you may find additional details by expanding each node into its subnodes. To open or collapse a node, double-click the name of the node or alternatively click ⊞ or ⊟ next to the name of the node. As you browse through the tree structure of nodes and subnodes in the Navigation window you may find various details for each node shown in the Description window. If you browse through items in the Description window, additional details for each item may be displayed in the Details window.

The following are the descriptions of the main nodes in the Navigation window and related information in the Description and Details windows.

Running processes

This node contains information about applications and processes running at the time of generating the log. In the Description window you may find additional details for each process such as dynamic libraries used by the process and their location in the system, the name of the application's vendor and the risk level of the file.

The Detail window contains additional information for items selected in the Description window such as the file size or its hash.

NOTE: An operating system comprises of several important kernel components running 24/7 that provide basic and

vital functions for other user applications. In certain cases, such processes are displayed in the tool ESET SysInspector with file path beginning with \??\. Those symbols provide pre-launch optimization for those processes; they are safe for the system.

Network connections

The Description window contains a list of processes and applications communicating over the network using the protocol selected in the Navigation window (TCP or UDP) along with the remote address where to which the application is connected to. You can also check the IP addresses of DNS servers.

The Detail window contains additional information for items selected in the Description window such as the file size or its hash.

Important Registry Entries

Contains a list of selected registry entries which are often related to various problems with your system like those specifying startup programs, browser helper objects (BHO), etc.

In the Description window you may find which files are related to specific registry entries. You may see additional details in the Details window.

Services

The Description window Contains a list of files registered as windows Services. You may check the way the service is set to start along with specific details of the file in the Details window.

Drivers

A list of drivers installed in the system.

Critical files

The Description window displays content of critical files related to the Microsoft windows operating system.

System Scheduler Tasks

Contains a list of tasks triggered by Windows Task Scheduler at a specified time/interval.

System information

Contains detailed information about hardware and software along with information about set environmental variables, user rights and system event logs.

File details

A list of important system files and files in the Program Files folder. Additional information specific for the files can be found in the Description and Details windows.

About

Information about version of ESET SysInspector and the list of program modules.

5.5.2.2.1 Keyboard shortcuts

Key shortcuts that can be used when working with the ESET SysInspector include:

File

Ctrl+O	opens existing log
Ctrl+S	saves created logs

Generate

Ctrl+G	generates a standard computer status snapshot
Ctrl+H	generates a computer status snapshot that may also log sensitive information

Item Filtering

1, O	fine, risk level 1-9 items are displayed
2	fine, risk level 2-9 items are displayed
3	fine, risk level 3-9 items are displayed

4, U	unknown, risk level 4-9 items are displayed
5	unknown, risk level 5-9 items are displayed
6	unknown, risk level 6-9 items are displayed
7, B	risky, risk level 7-9 items are displayed
8	risky, risk level 8-9 items are displayed
9	risky, risk level 9 items are displayed
-	decreases risk level
+	increases risk level
Ctrl+9	filtering mode, equal level or higher
Ctrl+O	filtering mode, equal level only

View

Ctrl+5	view by vendor, all vendors
Ctrl+6	view by vendor, only Microsoft
Ctrl+7	view by vendor, all other vendors
Ctrl+3	displays full detail
Ctrl+2	displays medium detail
Ctrl+1	basic display
BackSpace	moves one step back
Space	moves one step forward
Ctrl+W	expands tree
Ctrl+Q	collapses tree

Other controls

Ctrl+T	goes to the original location of item after selecting in search results
Ctrl+P	displays basic information about an item
Ctrl+A	displays full information about an item
Ctrl+C	copies the current item's tree
Ctrl+X	copies items
Ctrl+B	finds information about selected files on the Internet
Ctrl+L	opens the folder where the selected file is located
Ctrl+R	opens the corresponding entry in the registry editor
Ctrl+Z	copies a path to a file (if the item is related to a file)
Ctrl+F	switches to the search field
Ctrl+D	closes search results
Ctrl+E	run service script

Comparing

Ctrl+Alt+O	opens original / comparative log
Ctrl+Alt+R	cancels comparison
Ctrl+Alt+1	displays all items
Ctrl+Alt+2	displays only added items, log will show items present in current log
Ctrl+Alt+3	displays only removed items, log will show items present in previous log
Ctrl+Alt+4	displays only replaced items (files inclusive)
Ctrl+Alt+5	displays only differences between logs
Ctrl+Alt+C	displays comparison
Ctrl+Alt+N	displays current log
Ctrl+Alt+P	opens previous log

Miscellaneous

F1	view help
Alt+F4	close program
Alt+Shift+F4	close program without asking
Ctrl+I	log statistics

5.5.2.3 Compare

The Compare feature allows the user to compare two existing logs. The outcome of this feature is a set of items not common to both logs. It is suitable if you want to keep track of changes in the system, a helpful tool for detecting activity of malicious code.

After it is launched, the application creates a new log which is displayed in a new window. Navigate to **File** > **Save log** to save a log to a file. Log files can be opened and viewed at a later time. To open an existing log, use **File** > **Open log**. In the main program window, ESET SysInspector always displays one log at a time.

The benefit of comparing two logs is that you can view a currently active log and a log saved in a file. To compare logs, use the option **File** > **Compare log** and choose **Select file**. The selected log will be compared to the active one in the main program windows. The comparative log will display only the differences between those two logs.

NOTE: If you compare two log files, select **File** > **Save log** to save it as a ZIP file; both files are saved. If you open this file later, the contained logs are automatically compared.

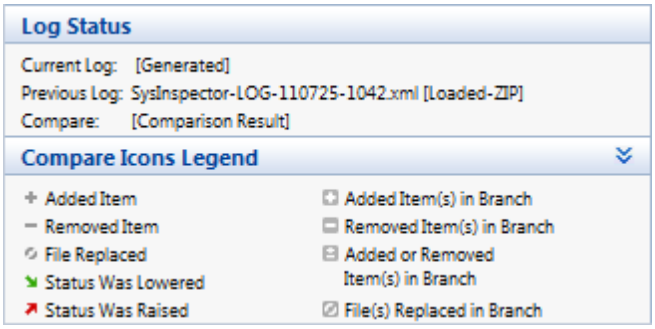
Next to the displayed items, ESET SysInspector shows symbols identifying differences between the compared logs.

Items marked by a – can only be found in the active log and were not present in the opened comparative log. Items marked by a + were present only in the opened log and are missing in the active one.

Description of all symbols that can be displayed next to items:

- + new value, not present in the previous log
- tree structure section contains new values
- – removed value, present in the previous log only
- tree structure section contains removed values
- value / file has been changed
- tree structure section contains modified values / files
- the risk level has decreased / it was higher in the previous log
- the risk level has increased / it was lower in the previous log

The explanation section displayed in the left bottom corner describes all symbols and also displays the names of logs which are being compared.



Any comparative log can be saved to a file and opened at a later time.

Example

Generate and save a log, recording original information about the system, to a file named previous.xml. After changes to the system have been made, open ESET SysInspector and allow it to generate a new log. Save it to a file named *current.xml*.

In order to track changes between those two logs, navigate to **File** > **Compare logs**. The program will create a comparative log showing differences between the logs.

The same result can be achieved if you use the following command line option:

SysIsnpector.exe current.xml previous.xml

5.5.3 Command line parameters

ESET SysInspector supports generating reports from the command line using these parameters:

/gen	generate a log directly from the command line without running the GUI
/privacy	generate a log excluding sensitive information
/zip	store the resulting log directly on the disk in a compressed file
/silent	suppress the display of the log generation progress bar
/help, /?	display information about the command line parameters

Examples

To load a specific log directly in the browser, use: *SysInspector.exe "c:\clientlog.xml"*
To generate a log to a current location, use: *SysInspector.exe /gen*
To generate a log to a specific folder, use: *SysInspector.exe /gen="c:\folder\"*
To generate a log to a specific file/location, use: *SysInspector.exe /gen="c:\folder\mynewlog.xml"*
To generate a log excluding sensitive information directly in a compressed file, use: *SysInspector.exe /gen="c:\mynewlog.zip" /privacy /zip*
To compare two logs, use: *SysInspector.exe "current.xml" "original.xml"*

NOTE: If the name of the file/folder contains a gap, then should be taken into inverted commas.

5.5.4 Service Script

Service script is a tool that provides help to customers that use ESET SysInspector by easily removing unwanted objects from the system.

Service script enables the user to export the entire ESET SysInspector log, or its selected parts. After exporting, you can mark unwanted objects for deletion. You can then run the modified log to delete marked objects.

Service Script is suited for advanced users with previous experience in diagnosing system issues. Unqualified modifications may lead to operating system damage.

Example

If you have a suspicion that your computer is infected by a virus which is not detected by your antivirus program, follow the step-by-step instructions below:

- Run ESET SysInspector to generate a new system snapshot.
- Select the first item in the section on the left (in the tree structure), press Shift and select the last item to mark all items.
- Right click the selected objects and select the **Export Selected Sections To Service Script** context menu option.
- The selected objects will be exported to a new log.
- This is the most crucial step of the entire procedure: open the new log and change the – attribute to + for all objects you want to remove. Please make sure you do not mark any important operating system files/objects.
- Open ESET SysInspector, click **File** > **Run Service Script** and enter the path to your script.
- Click **OK** to run the script.

5.5.4.1 Generating Service script

To generate a script, right-click any item from the menu tree (in the left pane) in the ESET SysInspector main window. From the context menu, select either the **Export All Sections To Service Script** option or the **Export Selected Sections To Service Script** option.

NOTE: It is not possible to export the service script when two logs are being compared.

5.5.4.2 Structure of the Service script

In the first line of the script's header, you can find information about the Engine version (ev), GUI version (gv) and the Log version (lv). You can use this data to track possible changes in the .xml file that generates the script and prevent any inconsistencies during execution. This part of the script should not be altered.

The remainder of the file is divided into sections in which items can be edited (denote those that will be processed by the script). You mark items for processing by replacing the "-" character in front of an item with a "+" character. Sections in the script are separated from each other by an empty line. Each section has a number and title.

01) Running processes

This section contains a list of all processes running in the system. Each process is identified by its UNC path and, subsequently, its CRC16 hash code in asterisks (*).

Example:

```
01) Running processes:
- \SystemRoot\System32\smss.exe *4725*
- C:\Windows\system32\svchost.exe *FD08*
+ C:\Windows\system32\module32.exe *CF8A*
[...]
```

In this example a process, module32.exe, was selected (marked by a "+" character); the process will end upon execution of the script.

02) Loaded modules

This section lists currently used system modules.

Example:

```
02) Loaded modules:
- c:\windows\system32\svchost.exe
- c:\windows\system32\kernel32.dll
+ c:\windows\system32\khbekhb.dll
- c:\windows\system32\advapi32.dll
[...]
```

In this example the module khbekhb.dll was marked by a "+". When the script runs, it will recognize the processes using that specific module and end them.

03) TCP connections

This section contains information about existing TCP connections.

Example:

```
03) TCP connections:
- Active connection: 127.0.0.1:30606 -> 127.0.0.1:55320, owner: ekrn.exe
- Active connection: 127.0.0.1:50007 -> 127.0.0.1:50006,
- Active connection: 127.0.0.1:55320 -> 127.0.0.1:30606, owner: OUTLOOK.EXE
- Listening on *, port 135 (epmap), owner: svchost.exe
+ Listening on *, port 2401, owner: fservice.exe Listening on *, port 445 (microsoft-ds), owner:
System
[...]
```

When the script runs, it will locate the owner of the socket in the marked TCP connections and stop the socket, freeing system resources.

04) UDP endpoints

This section contains information about existing UDP endpoints.

Example:

```
04) UDP endpoints:
- 0.0.0.0, port 123 (ntp)
+ 0.0.0.0, port 3702
- 0.0.0.0, port 4500 (ipsec-msft)
- 0.0.0.0, port 500 (isakmp)
[...]
```

When the script runs, it will isolate the owner of the socket at the marked UDP endpoints and stop the socket.

05) DNS server entries

This section contains information about the current DNS server configuration.

Example:

```
05) DNS server entries:
+ 204.74.105.85
- 172.16.152.2
[...]
```

Marked DNS server entries will be removed when you run the script.

06) Important registry entries

This section contains information about important registry entries.

Example:

```
06) Important registry entries:
* Category: Standard Autostart (3 items)
 HKLM\SOFTWARE\Microsoft\Windows\CurrentVersion\Run
- HotKeysCmds = C:\Windows\system32\hkcmd.exe
- IgfxTray = C:\Windows\system32\igfxtray.exe
 HKCU\SOFTWARE\Microsoft\Windows\CurrentVersion\Run
- Google Update = "C:\Users\antoniak\AppData\Local\Google\Update\GoogleUpdate.exe" /c
* Category: Internet Explorer (7 items)
 HKLM\Software\Microsoft\Internet Explorer\Main
+ Default_Page_URL = http://thatcrack.com/
[...]
```

The marked entries will be deleted, reduced to 0-byte values or reset to their default values upon script execution. The action to be applied to a particular entry depends on the entry category and key value in the specific registry.

07) Services

This section lists services registered within the system.

Example:

```
07) Services:
- Name: Andrea ADI Filters Service, exe path: c:\windows\system32\aeadisrv.exe, state: Running,
startup: Automatic
- Name: Application Experience Service, exe path: c:\windows\system32\aelupsvc.dll, state: Running,
startup: Automatic
- Name: Application Layer Gateway Service, exe path: c:\windows\system32\alg.exe, state: Stopped,
startup: Manual
[...]
```

The services marked and their dependant services will be stopped and uninstalled when the script is executed.

08) Drivers

This section lists installed drivers.

Example:

```
08) Drivers:
- Name: Microsoft ACPI Driver, exe path: c:\windows\system32\drivers\acpi.sys, state: Running,
startup: Boot
- Name: ADI UAA Function Driver for High Definition Audio Service, exe path: c:\windows\system32
\drivers\adihdaud.sys, state: Running, startup: Manual
[...]
```

When you execute the script, the drivers selected will be stopped. Note that some drivers won't allow themselves to be stopped.

09) Critical files

This section contains information about files that are critical to proper function of the operating system.

Example:

```
09) Critical files:
* File: win.ini
- [fonts]
- [extensions]
- [files]
- MAPI=1
[...]
* File: system.ini
- [386Enh]
- woafont=dosapp.fon
- EGA80WOA.FON=EGA80WOA.FON
[...]
* File: hosts
- 127.0.0.1 localhost
- ::1 localhost
[...]
```

The selected items will either be deleted or reset to their original values.

5.5.4.3 Executing Service scripts

Mark all desired items, then save and close the script. Run the edited script directly from the ESET SysInspector main window by selecting the **Run Service Script** option from the File menu. When you open a script, the program will prompt you with the following message: **Are you sure you want to run the service script "%Scriptname%"?** After you confirm your selection, another warning may appear, informing you that the service script you are trying to run has not been signed. Click **Run** to start the script.

A dialog window will confirm that the script was successfully executed.

If the script could only be partially processed, a dialog window with the following message will appear: **The service script was run partially. Do you want to view the error report?** Select **Yes** to view a complex error report listing the operations that were not executed.

If the script was not recognized, a dialog window with the following message will appear: **The selected service script is not signed. Running unsigned and unknown scripts may seriously harm your computer data. Are you sure you want to run the script and carry out the actions?** This may be caused by inconsistencies within the script (damaged heading, corrupted section title, empty line missing between sections etc.). You can either reopen the script file and correct the errors within the script or create a new service script.

5.5.5 FAQ

Does ESET SysInspector require Administrator privileges to run ?

While ESET SysInspector does not require Administrator privileges to run, some of the information it collects can only be accessed from an Administrator account. Running it as a Standard User or a Restricted User will result in it collecting less information about your operating environment.

Does ESET SysInspector create a log file ?

ESET SysInspector can create a log file of your computer's configuration. To save one, select **File** > **Save Log** from the main menu. Logs are saved in XML format. By default, files are saved to the *%USERPROFILE%\My Documents* directory, with a file naming convention of "SysInpsector-%COMPUTERNAME%-YYMMDD-HHMM.XML". You may change the location and name of the log file to something else before saving if you prefer.

How do I view the ESET SysInspector log file ?

To view a log file created by ESET SysInspector, run the program and select **File** > **Open Log** from the main menu. You can also drag and drop log files onto the ESET SysInspector application. If you need to frequently view ESET SysInspector log files, we recommend creating a shortcut to the SYSINSPECTOR.EXE file on your Desktop; you can then drag and drop log files onto it for viewing. For security reasons Windows Vista/7 may not allow drag and drop between windows that have different security permissions.

Is a specification available for the log file format? What about an SDK ?

At the current time, neither a specification for the log file or an SDK are available since the program is still in development. After the program has been released, we may provide these based on customer feedback and demand.

How does ESET SysInspector evaluate the risk posed by a particular object ?

In most cases, ESET SysInspector assigns risk levels to objects (files, processes, registry keys and so forth) using a series of heuristic rules that examine the characteristics of each object and then weight the potential for malicious activity. Based on these heuristics, objects are assigned a risk level from 1 - Fine (green) to 9 - Risky (red). In the left navigation pane, sections are colored based on the highest risk level of an object inside them.

Does a risk level of "6 - Unknown (red)" mean an object is dangerous ?

ESET SysInspector's assessments do not guarantee that an object is malicious – that determination should be made by a security expert. What ESET SysInspector is designed for is to provide a quick assessment for security experts so that they know what objects on a system they may want to further examine for unusual behavior.

Why does ESET SysInspector connect to the Internet when run ?

Like many applications, ESET SysInspector is signed with a digital signature "certificate" to help ensure the software was published by ESET and has not been altered. In order to verify the certificate, the operating system contacts a certificate authority to verify the identity of the software publisher. This is normal behavior for all digitally-signed programs under Microsoft Windows.

What is Anti-Stealth technology ?

Anti-Stealth technology provides effective rootkit detection.

If the system is attacked by malicious code that behaves as a rootkit, the user may be exposed to data loss or theft. Without a special anti-rootkit tool, it is almost impossible to detect rootkits.

Why are there sometimes files marked as "Signed by MS", having a different "Company Name" entry at the same time ?

When trying to identify the digital signature of an executable, ESET SysInspector first checks for a digital signature embedded in the file. If a digital signature is found, the file will be validated using that information. If a digital signature is not found, the ESI starts looking for the corresponding CAT file (Security Catalog - *%systemroot%\system32\catroot*) that contains information about the executable file processed. If the relevant CAT file is found, the digital signature of that CAT file will be applied in the validation process of the executable.

This is why there are sometimes files marked as "Signed by MS", but having a different "CompanyName" entry.

Example:

Windows 2000 includes the HyperTerminal application located in *C:\Program Files\Windows NT*. The main application executable file is not digitally signed, but ESET SysInspector marks it as a file signed by Microsoft. The reason for this is a reference in *C:\WINNT\system32\CatRoot\{F750E6C3-38EE-11D1-85E5-00C04FC295EE}\sp4.cat* pointing to *C:\Program Files\Windows NT\hypertrm.exe* (the main executable of the HyperTerminal application) and *sp4.cat* is digitally signed by Microsoft.

5.5.6 ESET SysInspector as part of ESET Smart Security

To open the ESET SysInspector section in ESET Smart Security, click **Tools** > **ESET SysInspector**. The management system in the ESET SysInspector window is similar to that of computer scan logs, or scheduled tasks. All operations with system snapshots – create, view, compare, remove and export – are accessible within one or two clicks.

The ESET SysInspector window contains basic information about the created snapshots such as create time, a short comment, name of the user that created the snapshot and snapshot status.

To compare, create, or delete snapshots, use the corresponding buttons located below the list of snapshots in the ESET SysInspector window. Those options are also available from the context menu. To view the selected system snapshot, use the **Show** context menu option. To export the selected snapshot to a file, right-click it and select **Export...**.

Below is a detailed description of the available options:

- **Compare** – Allows you to compare two existing logs. It is suitable if you want to track changes between the current log and an older log. For this option to take effect, you must select two snapshots to be compared.
- **Create...** – Creates a new record. Before that, you must enter a short comment about the record. To find out the snapshot creation progress (of the currently generated snapshot), see the **Status** column. All completed snapshots are marked by the **Created** status.
- **Delete/Delete all** – Removes entries from the list.
- **Export...** – Saves the selected entry in an XML file (also in a zipped version).

5.6 ESET SysRescue

ESET SysRescue is a utility which enables you to create a bootable disk containing one of the ESET Security solutions - it can be ESET NOD32 Antivirus, ESET Smart Security or even some of the server-oriented products. The main advantage of ESET SysRescue is the fact that ESET Security solution runs independent of the host operating system, while it has a direct access to the disk and the entire file system. This makes it possible to remove infiltrations which normally could not be deleted, e.g., when the operating system is running, etc.

5.6.1 Minimum requirements

ESET SysRescue works in the Microsoft Windows Preinstallation Environment (Windows PE) version 2.x, which is based on Windows Vista.

Windows PE is a part of the free package Windows Automated Installation Kit (Windows AIK), and therefore Windows AIK must be installed before creating ESET SysRescue (http://go.eset.eu/AIK). Due to the support of the 32-bit version of Windows PE, it is necessary to use a 32-bit installation package of ESET Security solution when creating ESET SysRescue on 64-bit systems. ESET SysRescue supports Windows AIK 1.1 and higher.

NOTE: Since Windows AIK is over 1 GB in size, a high-speed internet connection is required for smooth download.

ESET SysRescue is available in ESET Security solutions version 4.0 and higher.

Supported operating systems

- Windows 7
- Windows Vista
- Windows Vista Service Pack 1
- Windows Vista Service Pack 2
- Windows Server 2008
- Windows Server 2003 Service Pack 1 with KB926044
- Windows Server 2003 Service Pack 2
- Windows XP Service Pack 2 with KB926044
- Windows XP Service Pack 3

5.6.2 How to create rescue CD

To launch the ESET SysRescue wizard, click **Start** > **Programs** > **ESET** > **ESET Smart Security** > **ESET SysRescue**.

First, the wizard checks for the presence of Windows AIK and a suitable device for the boot media creation. If Windows AIK is not installed on the computer (or it is either corrupt or installed incorrectly), the wizard will offer you the option to install it, or to enter the path to your Windows AIK folder (http://go.eset.eu/AIK).

NOTE: Since Windows AIK is over 1 GB in size, a high-speed internet connection is required for smooth download.

In the next step, select the target media where ESET SysRescue will be located.

5.6.3 Target selection

In addition to CD/DVD/USB, you can choose to save ESET SysRescue in an ISO file. Later on, you can burn the ISO image on CD/DVD, or use it some other way (e.g. in the virtual environment such as VMware or VirtualBox).

If you select USB as the target medium, booting may not work on certain computers. Some BIOS versions may report problems with the BIOS - boot manager communication (e.g. on Windows Vista) and booting exits with the following error message:

```
file : \boot\bcd
status : 0xc000000e
info : an error occurred while attemping to read the boot configuration data
```

If you encounter this message, we recommend selecting CD instead of USB medium.

5.6.4 Settings

Before initiating ESET SysRescue creation, the install wizard displays compilation parameters in the last step of the ESET SysRescue wizard. These can be modified by clicking the **Change...** button. The available options include:

- Folders
- ESET Antivirus
- Advanced
- Internet protocol
- Bootable USB device (when the target USB device is selected)
- Burning (when the target CD/DVD drive is selected)

The **Create** button is inactive if no MSI installation package is specified, or if no ESET Security solution is installed on the computer. To select an installation package, click the **Change** button and go to the **ESET Antivirus** tab. Also, if you do not fill in username and password (**Change** > **ESET Antivirus**), the **Create** button is greyed out.

5.6.4.1 Folders

Temporary folder is a working directory for files required during ESET SysRescue compilation.

ISO folder is a folder, where the resulting ISO file is saved after the compilation is completed.

The list on this tab shows all local and mapped network drives together with the available free space. If some of the folders here are located on a drive with insufficient free space, we recommend that you select another drive with more free space available. Otherwise compilation may end prematurely due to insufficient free disk space.

External applications – Allows you to specify additional programs that will be run or installed after booting from a ESET SysRescue medium.

Include external applications – Allows you to add external programs to the ESET SysRescue compilation.

Selected folder – Folder in which programs to be added to the ESET SysRescue disk are located.

5.6.4.2 ESET Antivirus

For creating the ESET SysRescue CD, you can select two sources of ESET files to be used by the compiler.

ESS/EAV folder – Files already contained in the folder to which the ESET Security solution is installed on the computer.

MSI file – Files contained in the MSI installer are used.

Next, you can choose to update the location of (.nup) files. Normally, the default option **ESS/EAV folder/MSI file** should be set. In some cases, a custom **Update folder** can be chosen, e.g., to use an older or newer virus signature database version.

You can use one of the following two sources of username and password:

Installed ESS/EAV – Username and password will be copied from the currently installed ESET Security solution.

From user – Username and password entered in the corresponding text boxes will be used.

NOTE: ESET Security solution on the ESET SysRescue CD is updated either from the Internet or from the ESET Security solution installed on the computer on which the ESET SysRescue CD is run.

5.6.4.3 Advanced settings

The **Advanced** tab lets you optimize the ESET SysRescue CD according to the amount of memory on your computer. Select **576 MB and more** to write the content of the CD to the operating memory (RAM). If you select **less than 576 MB** , the recovery CD will be permanently accessed when WinPE will be running.

In the **External drivers** section, you can insert drivers for your specific hardware (usually network adapter). Although WinPE is based on Windows Vista SP1, which supports a large range of hardware, occasionally hardware is not recognized. This will required that you add a driver manually. There are two ways of introducing a driver into an ESET SysRescue compilation - manually (the **Add** button) and automatically (the **Aut. Search** button). In the case of manual inclusion, you need to select the path to the corresponding .inf file (applicable *.sys file must also be present in this folder). In the case of automatic introduction, the driver is found automatically in the operating system of the given computer. We recommend using automatic inclusion only if ESET SysRescue is used on a computer that has the same network adapter as the computer on which the ESET SysRescue CD was created. During creation, the ESET SysRescue driver is introduced into the compilation so you do not need to look for it later.

5.6.4.4 Internet protocol

This section allows you to configure basic network information and set up predefined connections after ESET SysRescue.

Select **Automatic private IP address** to obtain the IP address automatically from DHCP (Dynamic Host Configuration Protocol) server.

Alternatively, this network connection can use a manually specified IP address (also known as a static IP address). Select **Custom** to configure the appropriate IP settings. If you select this option, you must specify an **IP address** and, for LAN and high-speed Internet connections, a **Subnet mask**. In **Preferred DNS server** and **Alternate DNS server**, type the primary and secondary DNS server addresses.

5.6.4.5 Bootable USB device

If you have selected a USB device as your target medium, you can select one of the available USB devices on the **Bootable USB device** tab (in case there are more USB devices).

Select the appropriate target **Device** where ESET SysRescue will be installed.

Warning: The selected USB device will be formatted during the creation of ESET SysRescue. All data on the device will be deleted.

If you choose the **Quick format** option, formatting removes all the files from the partition, but does not scan the disk for bad sectors. Use this option if your USB device has been formatted previously and you are sure that it is not damaged.

5.6.4.6 Burn

If you have selected CD/DVD as your target medium, you can specify additional burning parameters on the **Burn** tab.

Delete ISO file – Check this option to delete the temporary ISO file after the ESET SysRescue CD is created.

Deletion enabled – Enables you to select fast erasing and complete erasing.

Burning device – Select the drive to be used for burning.

Warning: This is the default option. If a rewritable CD/DVD is used, all the data on the CD/DVD will be erased.

The Medium section contains information about the medium in your CD/DVD device.

Burning speed – Select the desired speed from the drop-down menu. The capabilities of your burning device and the type of CD/DVD used should be considered when selecting the burning speed.

5.6.5 Working with ESET SysRescue

For the rescue CD/DVD/USB to work effectively, you must start your computer from the ESET SysRescue boot media. Boot priority can be modified in the BIOS. Alternatively, you can use the boot menu during computer startup – usually using one of the F9 - F12 keys depending on the version of your motherboard/BIOS.

After booting up from the boot media, ESET Security solution will start. Since ESET SysRescue is used only in specific situations, some protection modules and program features present in the standard version of ESET Security solution are not needed; their list is narrowed down to **Computer scan**, **Update**, and some sections in **Setup**. The ability to update the virus signature database is the most important feature of ESET SysRescue, we recommend that you update the program prior starting a Computer scan.

5.6.5.1 Using ESET SysRescue

Suppose that computers in the network have been infected by a virus which modifies executable (.exe) files. ESET Security solution is capable of cleaning all infected files except for *explorer.exe*, which cannot be cleaned, even in Safe mode. This is because *explorer.exe*, as one of the essential Windows processes, is launched in Safe mode as well. ESET Security solution would not be able to perform any action with the file and it would remain infected.

In this type of scenario, you could use ESET SysRescue to solve the problem. ESET SysRescue does not require any component of the host operating system, and is therefore capable of processing (cleaning, deleting) any file on the disk.

6. Glossary

6.1 Types of infiltration

An Infiltration is a piece of malicious software trying to enter and/or damage a user's computer.

6.1.1 Viruses

A computer virus is a piece of malicious code that is pre-pended or appended to existing files on your computer. Viruses are named after biological viruses because they use similar techniques to spread from one computer to another. As for the term "virus", it is often used incorrectly to mean any type of a threat. This usage is gradually being overcome and replaced with a more accurate term "malware" (malicious software).

Computer viruses mainly attack executable files and documents. In short, this is how a computer virus works: after execution of an infected file, the malicious code is called and executed prior to the execution of the original application. A virus can infect any files that the current user has write permissions for.

Computer viruses can range in purpose and severity. Some of them are extremely dangerous because of their ability to purposely delete files from a hard drive. On the other hand, some viruses do not cause any damage – they only serve to annoy the user and demonstrate the technical skills of their authors.

If your computer is infected with a virus and cleaning is not possible, submit it to the ESET lab for perusal. In certain cases infected files can be modified to such an extent that cleaning is not possible and the files must be replaced with a clean copy.

6.1.2 Worms

A computer worm is a program containing malicious code that attacks host computers and spreads via network. The basic difference between a virus and a worm is that worms have the ability to propagate by themselves; they are not dependant on host files (or boot sectors). Worms spread to email addresses in your contact list or exploit security vulnerabilities in network applications.

Worms are therefore much more viable than computer viruses. Due to the wide availability of the Internet, they can spread across the globe within hours or even minutes after their release. This ability to replicate independently and rapidly makes them more dangerous than other types of malware.

A worm activated in a system can cause a number of inconveniences: It can delete files, degrade system performance, or even deactivate programs. The nature of a computer worm qualifies it as a "means of transport" for other types of infiltrations.

If your computer is infected with a worm, we recommend you delete the infected files because they likely contain malicious code.

6.1.3 Trojans

Historically, computer Trojans (Trojan horses) have been defined as a class of threats which attempt to present themselves as useful programs and thus trick users into running them.

Since Trojans are a very broad category, it is often divided into several subcategories:

- **Downloader** – Malicious programs with the ability to download other threats from the Internet.
- **Dropper** – Malicious programs with the ability to drop other types of malware onto compromised computers.
- **Backdoor** – Malicious programs which communicate with remote attackers, allowing them to gain access to the computer and take control over it.
- **Keylogger** – (keystroke logger) – A program which records each keystroke that a user types and sends the information to remote attackers.
- **Dialer** – Malicious programs designed to connect via premium-rate numbers instead of the user's Internet service provider. It is almost impossible for a user to notice that a new connection was created. Dialers can only cause damage to users with dial-up modems, which are no longer regularly used.

If a file on your computer is detected as a Trojan, it is advisable to delete it, since it most likely contains nothing but malicious code.

6.1.4 Rootkits

Rootkits are malicious programs that grant Internet attackers unlimited access to a system, while concealing their presence. Rootkits, after accessing a system (usually exploiting a system vulnerability), use functions in the operating system to avoid detection by antivirus software: they conceal processes, files and Windows registry data. For this reason, it is almost impossible to detect them using ordinary testing techniques.

There are two levels of detection to prevent rootkits:

1. When they try to access a system. They are still not present, and are therefore inactive. Most antivirus systems are able to eliminate rootkits at this level (assuming that they actually detect such files as being infected).
2. When they are hidden from the usual testing. ESET Smart Security users have the advantage of Anti-Stealth technology, which is also able to detect and eliminate active rootkits.

6.1.5 Adware

Adware is a short for advertising-supported software. Programs displaying advertising material fall under this category. Adware applications often automatically open a new pop-up window containing advertisements in an Internet browser, or change the browser's home page. Adware is frequently bundled with freeware programs, allowing their creators to cover development costs of their (usually useful) applications.

Adware itself is not dangerous – users will only be bothered with advertisements. Its danger lies in the fact that adware may also perform tracking functions (as spyware does).

If you decide to use a freeware product, please pay particular attention to the installation program. The installer will most likely notify you of the installation of an extra adware program. Often you will be allowed to cancel it and install the program without adware.

Some programs will not install without adware, or their functionality will be limited. This means that adware may often access the system in a "legal" way, because users have agreed to it. In this case, it is better to be safe than sorry.If there is a file detected as adware on your computer, it is advisable to delete it, since there is a high probability that it contains malicious code.

6.1.6 Spyware

This category covers all applications which send private information without user consent/awareness. Spyware uses tracking functions to send various statistical data such as a list of visited websites, email addresses from the user's contact list, or a list of recorded keystrokes.

The authors of spyware claim that these techniques aim to find out more about users' needs and interests and allow better-targeted advertisement. The problem is that there is no clear distinction between useful and malicious applications and no one can be sure that the retrieved information will not be misused. The data obtained by spyware applications may contain security codes, PINs, bank account numbers, etc. Spyware is often bundled with free versions of a program by its author in order to generate revenue or to offer an incentive for purchasing the software. Often, users are informed of the presence of spyware during a program's installation to give them an incentive to upgrade to a paid version without it.

Examples of well-known freeware products which come bundled with spyware are client applications of P2P (peer-to-peer) networks. Spyfalcon or Spy Sheriff (and many more) belong to a specific spyware subcategory – they appear to be antispyware programs, but in fact they are spyware programs themselves.

If a file is detected as spyware on your computer, it is advisable to delete it, since there is a high probability that it contains malicious code.

6.1.7 Potentially unsafe applications

There are many legitimate programs whose function is to simplify the administration of networked computers. However, in the wrong hands, they may be misused for malicious purposes. ESET Smart Security provides the option to detect such threats.

Potentially unsafe applications is the classification used for commercial, legitimate software. This classification includes programs such as remote access tools, password-cracking applications, and keyloggers (a program that records each keystroke a user types).

If you find that there is a potentially unsafe application present and running on your computer (and you did not install it), please consult your network administrator or remove the application.

6.1.8 Potentially unwanted applications

Potentially unwanted applications (PUAs) are not necessarily intended to be malicious, but may affect the performance of your computer in a negative way. Such applications usually require consent for installation. If they are present on your computer, your system behaves differently (compared to the state before their installation). The most significant changes are:

- New windows you haven't seen previously (pop-ups, ads),
- Activating and running of hidden processes,
- Increased usage of system resources,
- Changes in search results,
- Application communicates with remote servers.

6.2 Types of remote attacks

There are many special techniques which allow attackers to compromise remote systems. These are divided into several categories.

6.2.1 DoS attacks

DoS, or *Denial of Service*, is an attempt to make a computer or network unavailable for its intended users. The communication between afflicted users is obstructed and can no longer continue in a functional way. Computers exposed to DoS attacks usually need to be restarted in order to work properly.

In most cases, the targets are web servers and the aim is to make them unavailable to users for a certain period of time.

6.2.2 DNS Poisoning

Using DNS (Domain Name Server) poisoning, hackers can trick the DNS server of any computer into believing that the fake data they supplied is legitimate and authentic. The fake information is cached for a certain period of time, allowing attackers to rewrite DNS replies of IP addresses. As a result, users trying to access Internet websites will download computer viruses or worms instead of their original content.

6.2.3 Worm attacks

A computer worm is a program containing malicious code that attacks host computers and spreads via a network. The network worms exploit security vulnerabilities in various applications. Due to the availability of the Internet, they can spread all over the world within a few hours of their release. In some cases, even in minutes.

Most worm attacks (Sasser, SqlSlammer) can be avoided by using default security settings in the firewall, or by blocking unprotected and unused ports. Also, it is essential that your operating system is updated with the most recent security patches.

6.2.4 Port scanning

Port scanning is used to determine which computer ports are open on a network host. A port scanner is software designed to find such ports.

A computer port is a virtual point which handles incoming and outgoing data – this is crucial from a security point of view. In a large network, the information gathered by port scanners may help to identify potential vulnerabilities. Such use is legitimate.

Still, port scanning is often used by hackers attempting to compromise security. Their first step is to send packets to each port. Depending on the response type, it is possible to determine which ports are in use. The scanning itself causes no damage, but be aware that this activity can reveal potential vulnerabilities and allow attackers to take control of remote computers.

Network administrators are advised to block all unused ports and protect those that are in use from unauthorized access.

6.2.5 TCP desynchronization

TCP desynchronization is a technique used in TCP Hijacking attacks. It is triggered by a process in which the sequential number in incoming packets differs from the expected sequential number. Packets with an unexpected sequential number are dismissed (or saved in the buffer storage, if they are present in the current communication window).

In desynchronization, both communication endpoints dismiss received packets, at which point remote attackers are able to infiltrate and supply packets with a correct sequential number. The attackers can even manipulate or modify communication.

TCP Hijacking attacks aim to interrupt server-client, or peer-to-peer communications. Many attacks can be avoided by using authentication for each TCP segment. It is also advised to use the recommended configurations for your network devices.

6.2.6 SMB Relay

SMBRelay and SMBRelay2 are special programs that are capable of carrying out attacks against remote computers. The programs take advantage of the Server Message Block file sharing protocol, which is layered onto NetBIOS. A user sharing any folder or directory within the LAN most likely uses this file sharing protocol.

Within local network communication, password hashes are exchanged.

SMBRelay receives a connection on UDP port 139 and 445, relays the packets exchanged by the client and server, and modifies them. After connecting and authenticating, the client is disconnected. SMBRelay creates a new virtual IP address. The new address can be accessed using the command "net use \\192.168.1.1". The address can then be used by any of the Windows networking functions. SMBRelay relays SMB protocol communication except for negotiation and authentication. Remote attackers can use the IP address, as long as the client computer is connected.

SMBRelay2 works on the same principle as SMBRelay, except it uses NetBIOS names rather than IP addresses. Both can carry out "man-in-the-middle" attacks. These attacks allow remote attackers to read, insert and modify messages exchanged between two communication endpoints without being noticed. Computers exposed to such attacks often stop responding or unexpectedly restart.

To avoid attacks, we recommend that you use authentication passwords or keys.

6.2.7 ICMP attacks

The ICMP (Internet Control Message Protocol) is a popular and widely-used Internet protocol. It is used primarily by networked computers to send various error messages.

Remote attackers attempt to exploit the weaknesses of the ICMP protocol. The ICMP protocol is designed for one-way communication requiring no authentication. This enables remote attackers to trigger so-called DoS (Denial of Service) attacks, or attacks which give unauthorized individuals access to incoming and outgoing packets.

Typical examples of an ICMP attack are ping flood, ICMP_ECHO flood and smurf attacks. Computers exposed to the ICMP attack are significantly slower (this applies to all applications using the Internet) and have problems connecting to the Internet.

6.3 Email

Email, or electronic mail, is a modern form of communication with many advantages. It is flexible, fast and direct, and played a crucial role in the proliferation of the Internet in the early 1990's.

Unfortunately, with a high level of anonymity, email and the Internet leave room for illegal activities such as spamming. Spam includes unsolicited advertisements, hoaxes and proliferation of malicious software – malware. The inconvenience and danger to you is increased by the fact that the cost of sending spam is minimal, and authors of spam have many tools to acquire new email addresses. In addition, the volume and variety of spam makes it very difficult to regulate. The longer you use your email address, the more likely it will end up in a spam engine database. Some hints for prevention:

- If possible, don't publish your email address on the Internet
- Only give your email address to trusted individuals
- If possible, don't use common aliases – with more complicated aliases, the probability of tracking is lower
- Don't reply to spam that has already arrived in your inbox
- Be careful when filling out Internet forms – be especially cautious of options such as "Yes, I want to receive information".
- Use "specialized" email addresses – e.g., one for business, one for communication with your friends, etc.
- From time to time, change your email address
- Use an Antispam solution

6.3.1 Advertisements

Internet advertising is one of the most rapidly growing forms of advertising. Its main marketing advantages are minimal costs and a high level of directness; what's more, messages are delivered almost immediately. Many companies use email marketing tools to effectively communicate with their current and prospective customers.

This type of advertising is legitimate, since you may be interested in receiving commercial information about some products. But many companies send unsolicited bulk commercial messages. In such cases, email advertising crosses the line and becomes spam.

The amount of unsolicited email has become a problem and it shows no signs of slowing. Authors of unsolicited email often attempt to disguise spam as legitimate messages.

6.3.2 Hoaxes

A hoax is misinformation which is spread across the Internet. Hoaxes are usually sent via email or communication tools like ICQ and Skype. The message itself is often a joke or Urban Legend.

Computer Virus hoaxes try to generate fear, uncertainty and doubt (FUD) in the recipients, bringing them to believe that there is an "undetectable virus" deleting files and retrieving passwords, or performing some other harmful activity on their system.

Some hoaxes work by asking recipients to forward messages to their contacts, perpetuating the hoax. There are mobile phone hoaxes, pleas for help, people offering to send you money from abroad, etc. It is often impossible to determine the intent of the creator.

If you see a message prompting you to forward it to everyone you know, it may very well be a hoax. There are many websites on the Internet that can verify if an email is legitimate. Before forwarding, perform an Internet search on any message you suspect is a hoax.

6.3.3 Phishing

The term phishing defines a criminal activity which uses techniques of social engineering (manipulating users in order to obtain confidential information). Its aim is to gain access to sensitive data such as bank account numbers, PIN codes, etc.

Access is usually achieved by sending email masquerading as a trustworthy person or business (e.g., financial institution, insurance company). The email can look very genuine, and will contain graphics and content which may have originally come from the source it is impersonating. You will be asked to enter, under various pretenses (data verification, financial operations), some of your personal data – bank account numbers or usernames and passwords. All such data, if submitted, can easily be stolen and misused.

Banks, insurance companies, and other legitimate companies will never request usernames and passwords in an unsolicited email.

6.3.4 Recognizing spam scams

Generally, there are a few indicators which can help you identify spam (unsolicited emails) in your mailbox. If a message fulfills at least some of the following criteria, it is most likely a spam message.

- Sender address does not belong to someone on your contact list.
- You are offered a large sum of money, but you have to provide a small sum first.
- You are asked to enter, under various pretenses (data verification, Financial operations), some of your personal data – bank account numbers, usernames and passwords, etc.
- It is written in a foreign language.
- You are asked to buy a product you are not interested in. If you decide to purchase anyway, please verify that the message sender is a reliable vendor (consult the original product manufacturer).
- Some of the words are misspelled in an attempt to trick your spam filter. For example "vaigra" instead of "viagra", etc.

6.3.4.1 Rules

In the context of Antispam solutions and email clients, rules are tools for manipulating email functions. They consist of two logical parts:

1. Condition (e.g., an incoming message from a certain address)
2. Action (e.g., deletion of the message, moving it to a specified folder)

The number and combination of rules varies with the Antispam solution. These rules serve as measures against spam (unsolicited email). Typical examples:

- 1. Condition: An incoming email message contains some of the words typically seen in spam messages
  2. Action: Delete the message
- 1. Condition: An incoming email message contains an attachment with an .exe extension
  2. Action: Delete the attachment and deliver the message to the mailbox
- 1. Condition: An incoming email message arrives from your employer
  2. Action: Move the message to the "Work" folder

We recommend that you use a combination of rules in Antispam programs in order to facilitate administration and to more effectively filter spam.

6.3.4.2 Whitelist

In general, a whitelist is a list of items or persons who are accepted, or have been granted permission. The term "email whitelist" defines a list of contacts from whom the user wishes to receive messages. Such whitelists are based on keywords searched for in email addresses, domain names, or IP addresses.

If a whitelist works in "exclusivity mode", then messages from any other address, domain, or IP address will not be received. If a whitelist is not exclusive, such messages will not be deleted, but filtered in some other way.

A whitelist is based on the opposite principle to that of a blacklist. Whitelists are relatively easy to maintain, more so than blacklists. We recommend that you use both the Whitelist and Blacklist to filter spam more effectively.

6.3.4.3 Blacklist

Generally, a blacklist is a list of unaccepted or forbidden items or persons. In the virtual world, it is a technique enabling acceptance of messages from all users not present on such a list.

There are two types of blacklist: Those created by users within their Antispam application, and professional, regularly updated blacklists which are created by specialized institutions and can be found on the Internet.

It is essential to use blacklists to successfully block spam, but they are difficult to maintain, since new items to be blocked appear every day. We recommended you use both a whitelist and a blacklist to most effectively filter spam.

6.3.4.4 Server-side control

Server-side control is a technique for identifying mass spam based on the number of received messages and the reactions of users. Each message leaves a unique digital "footprint" based on the content of the message. The unique ID number tells nothing about the content of the email. Two identical messages will have identical footprints, while different messages will have different footprints.

If a message is marked as spam, its footprint is sent to the server. If the server receives more identical footprints (corresponding to a certain spam message), the footprint is stored in the spam footprints database. When scanning incoming messages, the program sends the footprints of the messages to the server. The server returns information on which footprints correspond to messages already marked by users as spam.